Intentionally Effects on the Outcomes of Nascent Venturing Processes

Thesis

Intentionality Effects on the Outcomes of Nascent Venturing Processes

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Abstract

This research focuses on the nascent entrepreneurship phase, also known as the gestation or preparation phase of start-up projects. With the general objective of providing a better understanding of what happens during this phase at both the project and the nascent entrepreneur levels, it draws on a number of different entrepreneurial research approaches to generate its findings. The primary source of inspiration is intention-based research, but human and social capital measures are brought into the analysis to provide a more resource-oriented perspective. In addition, gestation behaviours are included in the study in order to reflect the process nature of nascent entrepreneurship.

The longitudinal design adopted here of surveying nascent entrepreneurs at two points in time (pre- and post-potential start), separated by one year, led to findings that are new for nascent entrepreneurship research.

First, at the project level the results presented provide strong support for the intention model in an entrepreneurial context, including the intention-behaviour link, which has hitherto been under-researched. The number of gestation activities undertaken appears to have a strong positive impact on entrepreneurial self-efficacy, intention and the subsequent actual start-up. In addition, a positive relationship between the use of professional support and the likelihood of the venture being started is apparent here.

Second, at the individual level the results suggest that being involved in a nascent venture does change people by bringing them to reassess their perceptions towards entrepreneurship. Overall, individuals seem to experience something of a reality check. Those who entered the process with highly positive perceptions revise them downwards (for example, displaying lower - or more realistic – attitude towards self-employment) and those who had less favourable initial perceptions adjust them to more positive levels.

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Glossary

AOM: Academy of Management

CCI: Chambre de Commerce et d'Industrie

CRCI: Chambre Régionale de Commerce et d'Industrie

DV: Dependent Variable

ESE: Entrepreneurial Self-Efficacy

EFA: Exploratory Factor Analysis

GEM: Global Entrepreneurship Monitor

HRA: Hierarchical Regression Analysis

INSEE: Institut National de la Statistique et des Etudes Economiques

IV: Independent Variable

PCA: Principal Component Analysis

PSED: Panel Study of Entrepreneurial Dynamics

SINE: Système d'Information sur des Nouvelles Entreprises

TPB: Theory of Planned Behaviour

VIF: Variance Inflation Factor

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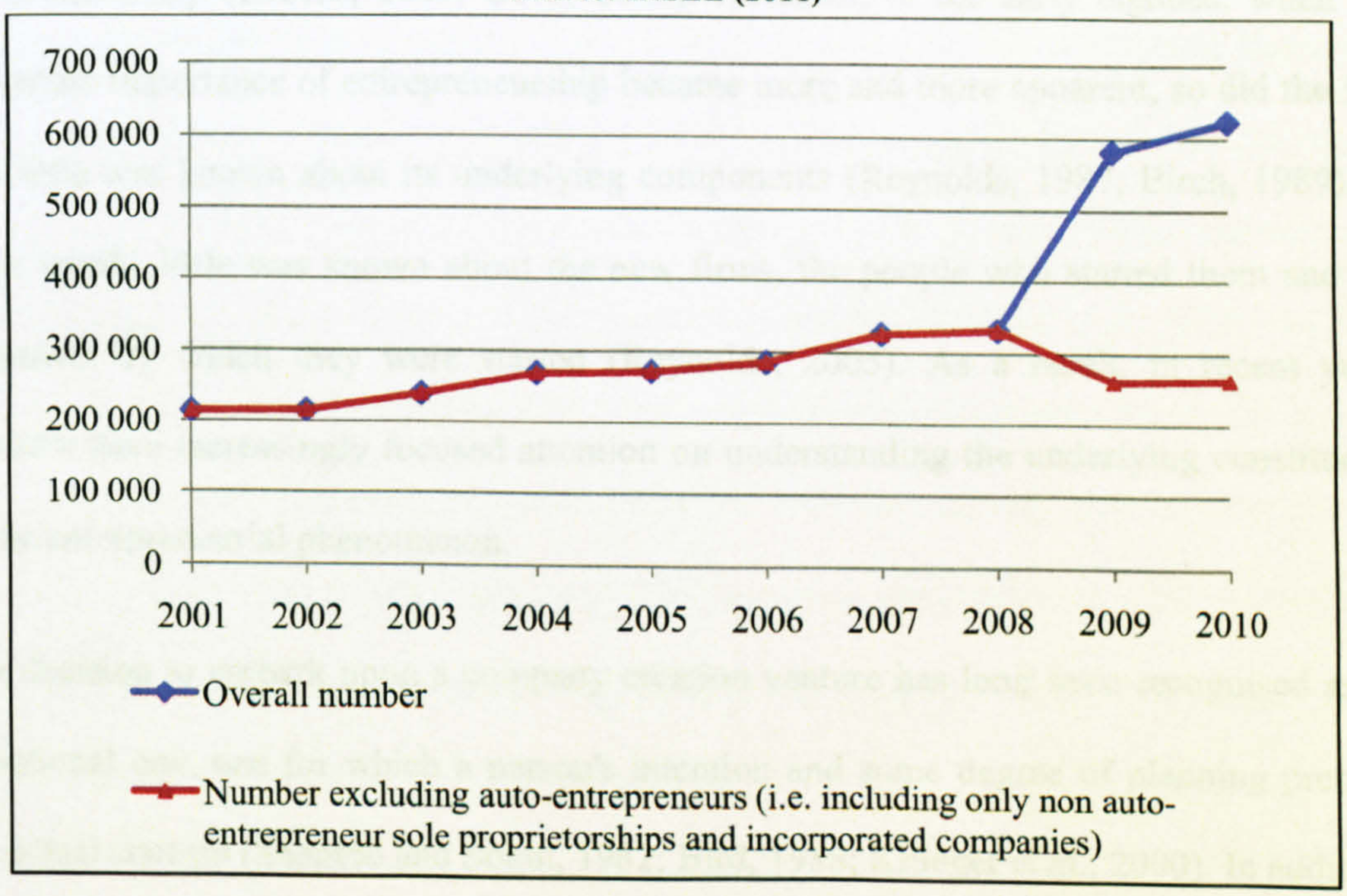
1. Introduction and rationale

Over the past decade, the importance of new enterprises to the French economy appears to have grown. However, very little is known about the determinants of career choice, what impels so many different types of people to try to start their own businesses and what accounts for the different outcomes of the initial decision to consider starting a new venture after a certain period (started-up, still in preparation or withdrawn). According to the French national statistical institute INSEE the number of new start-ups in the country in 2010 reached an all-time high of 622,000 (INSEE, 2011). Much of the increase witnessed over the past two years was triggered by the introduction in January 2009 of the *auto-entrepreneur* (self-employed) scheme in the country. This scheme offered a new option (simpler and less taxed than existing ones) to entrepreneurs wishing to register sole proprietorships operating within certain turnover limits (in 2010 these limits were €80,300 for trade activities and €32,100 for services). However, as the data for the last decade show, the trend in company creation had already been slightly up for several years before that (figure 1).

Figure 1: Annual number of start-ups in France: 10-year history
Source: INSEE (2011)



These new start-ups, whether created in the form of sole proprietorships or as incorporated companies, are an illustration of the entrepreneurship phenomenon that has been recognised as an important component of economic growth in an increasingly fast-changing and knowledge-based economic environment (OECD, 1996; Audretsch and Thurik, 2000).

When looking at the degree of innovativeness embedded in these new companies, it has been shown that only a small minority of them can be classified as innovative. For example, Samuelsson (2004), based on Swedish data, estimated the proportion of innovative ventures to be 12% and that of what he called "reproducing" types of ventures to be 88%. In addition, according to INSEE (2007b) less than 5% of the start-ups launched in France in 2006 operated in innovative sectors. Still, despite the fact that reproducing ventures vastly outnumber innovative ventures, existing research appears to provide less explanation regarding the nascent venturing process for the former than for the latter (Samuelsson, 2004).

From a macro-economic standpoint, contribution to the diffusion of innovation and productivity and employment gains are among the benefits which are today attributed to entrepreneurship (INSEE, 2003; Cotis, 2007). However, in the early eighties, when the economic importance of entrepreneurship became more and more apparent, so did the fact that little was known about its underlying components (Reynolds, 1987; Birch, 1989). In other words, little was known about the new firms, the people who started them and the processes by which they were started (Reynolds, 2005). As a result, in recent years scholars have increasingly focused attention on understanding the underlying constituents of the entrepreneurial phenomenon.

The decision to embark upon a company creation venture has long been recognised as an intentional one, one for which a person's intention and some degree of planning precede the actual start-up (Shapero and Sokol, 1982; Bird, 1988; Krueger et al., 2000). In addition,

some people may direct themselves towards an entrepreneurial career following some positive or negative triggering events (Shapero and Sokol, 1982), such as having identified a business opportunity or having been made redundant from a previous job. These positive and negative drivers have been characterised respectively as demand pull and necessity push in the literature (Brooksbank and Thompson, 2008). The actual conscious entrepreneurial intention may sometimes be expressed only after the person engages in some activities directed towards company creation (Fayolle and Degeorge, 2007). Some people report that their aspiration to become entrepreneurs came before they found a business opportunity, while others indicate that it is the very identification of such an opportunity that drew them to starting their own activity (Bhave, 1994; Gartner and Carter, 2003). In all cases though, whether it is the fruit of careful consideration on the part of the aspiring entrepreneur or activated by an unexpected opportunity presenting itself, the exploitation of a start-up project is intention-driven (Thompson, 2009).

Understanding the determinants of entrepreneurial intentions has therefore been the focus of some entrepreneurship scholars' investigations (Krueger et al., 2000; Carsrud and Brännback, 2009). Intention-based frameworks have been developed by entrepreneurship scholars (Shapero and Sokol, 1982; Bird, 1988; Boyd and Vozikis, 1994; Davidsson, 1995) or imported into the field, as was the case for Ajzen's (1991) Theory of Planned Behaviour (TPB). In particular, Shapero and Sokol's (1982) entrepreneurial event formation model (SEE) and Ajzen's (1991) TPB have served as the basis for several studies interested in identifying the determinants of company creation intentions (Krueger et al., 2000). In these models different constructs are hypothesised as influencing intentions. While the models may differ in some respects, the main constructs that they include tend to overlap. For example, Kruger et al. (2000) point out that *perceived desirability* in SEE resembles a combination of *attitude* towards entrepreneurship and of *subjective norm* about entrepreneurship present in TPB. These authors also suggest that *perceived feasibility* in

SEE is similar to *perceived behavioural control* in TPB and to the related construct of *self-efficacy* (Bandura, 1977; 1986), which represents people's conviction that they are capable of executing the behaviours necessary to achieve a targeted outcome.

Analyses undertaken in various contexts highlight that cultural differences may impact the importance of each intention determinant (Autio et al., 2001; Boissin et al., 2009a; Linan and Chen, 2009; Engle et al., 2010). In addition, the major part of current research using these models has been undertaken with student samples. This has made it impossible for intention-based research to follow aspiring entrepreneurs through from the initial preparation steps to the start-up or withdrawal decision to actually investigate the supposed link between intention and later entrepreneurial behaviour (Krueger et al., 2000; Shook et al., 2003; Zhao et al., 2005). The lack of empirical evidence concerning the transition between entrepreneurial intentions and subsequent actions has indeed been identified as leaving the question of the validity of this research stream open (Shook et al., 2003). Since the early years of the new millennium when these previous remarks were expressed, only Kolvereid and Isaksen's (2006) research study has used a detailed intention model to follow not students but a group of new entrepreneurs longitudinally in order to investigate the link between intention and one-year later self-employed activity. However, these authors identified the individuals surveyed by using official self-employment registrars, in other words when the self-employed activity already had legal existence. It therefore left open the question of what happens before this official birth event. In the present research an intention-based model will be used to analyse entrepreneurial undertakings among a group of working-age adults who have been in contact with a large French support network. These individuals were identified and surveyed a first time late 2008 after they had contacted the support agency. They were re-interviewed one year later and the status of their project (activity started, still in preparation or withdrawn) was then investigated. This

study is therefore in a position to investigate the strength of the above mentioned "intention-behaviour" link.

Researchers interested in firm formation view it as a process in which the nascent venture stage corresponds to the preparation of the new venture prior to its actual launch (Katz and Gartner, 1988; Bhave, 1994; Reynolds et al., 1994). Analysis of this specific nascent venturing stage has revealed that many more people are involved in nascent entrepreneurship than new firm formation statistics would indicate, as the vast majority of them do not reach the firm creation point (Reynolds, 2005). Moreover, a series of actions undertaken by entrepreneurs during this phase, called *gestation behaviours* or start-up activities, has been identified and has served to study processes of firm formation (Gatewood et al., 1995; Carter et al., 1996; Gartner and Carter, 2003). In the present research the count of such behaviours already completed prior to the survey will serve as an indicator of advancement for the projects under study.

Before a firm's activity can start, the nascent entrepreneur is required to assemble a series of tangible and intangible resources. Hence, resource-based approaches represent another angle which scholars have used to analyse the field (Samuelsson, 2004; Kim et al., 2006). In this research, the focus is on knowledge resources relevant to the venture creation process (De Clercq and Arenius, 2006). Among such resources *human capital* (accumulated knowledge) and *social capital* (access to outside knowledge or other resources) have been identified as important in fostering a project's development (Aldrich and Martinez, 2001). Nevertheless, the results concerning some of their specific components have produced contradictory evidence. For example, previous start-up experience has been put forward by some as increasing both the chance of being a nascent entrepreneur and of carrying the process through to the creation of new firm (Davidsson and Honig, 2003), which the authors interpreted as illustrating the importance of specialised knowledge acquired from previous start-up experience in such contexts. Others,

however, have suggested that this could actually reduce the likelihood of pursuing a new venture opportunity, possibly by generating discouragement in face of the effort required, especially if the previous start-up had to be abandoned (Kim et al., 2006). For highly dynamic markets, prior start-up successes have elsewhere been suggested as lowering the likelihood of carrying the process through to the point of a new firm formation, hinting at the fact that in such environments nascent entrepreneurs might be unable to correctly identify transferable success factors or to adapt them appropriately (Newbert, 2005). In addition, it has been suggested that the relevant resources, skills or abilities may vary with the development stage of the potential venture (Davidsson and Honig, 2003). Overall, evidence concerning the effect of human and social capital on the development of a new venture or the management of an existing one appears to be mixed and limited (Davidsson and Honig, 2003; Kim et al., 2006). For this reason, in a similar fashion to intention-based research, this resource-based perspective includes areas which warrant further investigation.

From a policy standpoint, the importance of providing adequate support to entrepreneurs in the development of their ventures has been given considerable emphasis (EC, 2004). Indeed, firms having received external support during their preparation phase appear to show better performance in terms of survival rates or later employment levels (Chrisman and McMullan, 2000; INSEE, 2006) which justifies this emphasis on support. While professional support can be viewed as an external source of knowledge for nascent entrepreneurs, others also have to be considered. During the company creation process, nascent entrepreneurs might receive external support from a variety of sources which can be categorised as informal (friends and family, former colleagues or clients) or formal (advisors dedicated to company creation or involved with businesses in general) (Birley, 1985). These can both provide access to resources not originally possessed by the entrepreneur. Still, despite the recognised interest in assisting entrepreneurs while they develop their project, literature regarding this assistance seems to be scarce and is found

more in magazines than in academic publications (Cuzin and Fayolle, 2004). It therefore represents another area still open for examination.

Both intention-based and resource-based inquiries into nascent entrepreneurship recognise the ever-evolving feature of this process. In fact, in the frameworks used by scholars from both lines of thought the various elements related to the nascent entrepreneurs are not considered to be stable over time. The very experience of getting involved in a potential start-up is today recognised as influencing the person undertaking it, regardless of whether it concludes with a start-up or with the project being abandoned (Bates, 2005). In addition, longitudinal intention-based studies have recently allowed the investigation of the influence of training programs on students' entrepreneurial perceptions (Souitaris et al., 2007; Fayolle and Gailly, 2009). This longitudinal application of intention models also provides new research opportunities.

In this context, the objective of this research is to provide a better understanding of both the factors leading to nascent venturing projects being started or withdrawn and the impact that a nascent venture experience has on the change in the perceptions towards entrepreneurship of the individuals involved in it. The main research problem for this study is therefore:

What are the determinants of the outcomes of nascent venturing processes in terms of

(1) started vs. withdrawn projects and

(2) changes in individuals' perceptions towards entrepreneurship?

This research has been undertaken following the identification of gaps in the understanding of nascent entrepreneurship and it echoes recent calls by scholars of nascent entrepreneurship to:

- investigate the antecedents of the ultimate entrepreneurial undertakings that represent the actual behaviour researchers are interested in (Krueger et al., 2000) and test the validity of

the intention-based research stream by investigating the link between intention and actual behaviour (Shook et al., 2003)

- investigate areas for which incomplete or sometimes contradictory findings have been identified (Davidsson and Honig, 2003; Newbert, 2005; Johnson et al., 2006; Kim et al., 2006)

- provide explanation of the development of reproducing venture opportunities, and not just innovative venture opportunities (Samuelsson, 2004)

- use field research to generate systematic evidence to better understand how the different actors involved in the nascent venturing process interrelate (Gartner and Carter, 2003)

- provide a better understanding of the support that entrepreneurs rely on during their preparation phase (Cuzin and Fayolle, 2004)

- deploy intention models and study novice entrepreneurs with the objective of providing a better understanding of entrepreneurial thinking (Krueger, 2007)

- include in the study not only projects started, but also ones abandoned (Van Auken, 1999; Shane and Delmar, 2004)

In France, the creation in 2006 of the "Observatoire Permanent des Porteurs de Projet d'Entreprise" by the Chambers of Commerce "Entreprendre en France" (EEF) network indicates the topical nature of this issue. However, the majority of the studies reviewed in this research remain based on data emanating mainly from the US, Sweden and the UK. Evidence from the literature review suggests that so far little research has been undertaken into French nascent entrepreneurship at the micro level. The magnitude of the phenomenon, the reasons for considering company creation (an opportunity identified or the lack of an attractive employment alternative) and general demographic characteristics of nascent entrepreneurs in the country (such as gender, age or educational level) have been analysed

(Torres and Eminet, 2005; EC, 2007b; IFOP, 2007, 2010). Intention models have been used to study the entrepreneurial intentions of French public sector researchers (Emin, 2003) or French students (Tounés, 2003). However, to our knowledge, no such research exists concerning French nascent entrepreneurs.

While the US and Sweden studies have been able to rely on impressive existing databases and have led to important advances in the field, the very extensive and broad nature of these surveys has prevented them from investigating more detailed characteristics of specific elements of the process (Gartner and Birley, 2002; Newbert, 2005; Kim, 2006). This study therefore seeks to provide more detailed information regarding the interactions between the human capital, informal and formal social capital, attitude, social norm, entrepreneurial self-efficacy and intention at the beginning of the process and the outcomes of the process at both the nascent venture and the nascent entrepreneur levels.

This study should be of interest to academics inside and outside France by contributing to the body of knowledge regarding the nascent venturing process through the investigation of issues that have been left unobserved by the large, standardised surveys. Moreover, one objective pursued via this research is to provide insights useful for the design and implementation of programs aimed at supporting entrepreneurship, which should be of value to policy makers and practitioners.

The thesis is organised as follows:

- Chapter 2 starts with background information regarding the current state of nascent entrepreneurship research and the French context in which this study took place. Information about the different theories used in this study is then provided. This chapter concludes with a presentation of the two research questions derived from the main research problem presented above.

- Chapter 3 presents the methodological aspects of the study. Epistemological considerations that guided the research choices are first discussed. Following this, the models related to the two research questions are presented. Study design, constructs measurement choices, construction of the questionnaires and sample cleaning decisions are then explained.

- Chapter 4 contains the data analysis related to the purification of the measurement instrument. It describes the different steps undertaken in order to develop the scales used in the two subsequent chapters.

- Chapter 5 is concerned with the first research question, the one related to the project level. Data analysis undertaken to test the hypotheses linked to this first research question is presented. The chapter concludes with a discussion of the results at the project-level.

- Chapter 6 consists of the analysis at the nascent entrepreneur level. It follows the same structure as the preceding chapter: hypothesis testing followed by a discussion of the results at the individual-level.

- Finally, chapter 7 concludes by bringing together the implications of the results of the data analysis chapters, discussing the contributions of this thesis and limitations of the research and providing recommendations for future research.

2. Entrepreneurship research: taking stock

Before turning to the specific field of nascent entrepreneurship, background information about the importance of entrepreneurship research needs to be provided. In the first part of this chapter, the importance of entrepreneurship from a macro-economic standpoint is first discussed and a description of entrepreneurship is then presented from the more micro- and process-oriented standpoint adopted for this study.

The focus next turns to the specific research stream in which this thesis is positioned, that which concerns nascent entrepreneurship and organisation creation. Theoretical approaches used by scholars in the field and that have influenced this thesis are described in this section. Specifically, the literature concerning trait and characteristics, intention-based, learning and resource-based analyses is reviewed. This part concludes by illustrating how these different views interact in recent research.

This chapter concludes with the presentation of the main research problem and the two corresponding research questions derived from it.

2.1 Entrepreneurship research: general background

The first section of this chapter aims to provide a general overview of current entrepreneurship research relevant to this thesis. It begins with an examination of the link between entrepreneurship and economic growth, which provided the original impetus for the development of the field. Following this, definitions proposed for entrepreneurship are reviewed in order to position this research within the field. Finally, evidence produced in recent years by scholars interested in nascent entrepreneurship is discussed.

2.1.1 Entrepreneurship and economic growth

Today entrepreneurial activity is linked to economic growth via innovation adoption, productivity gains and job creation (Reynolds, 1987; Birch, 1989; Audretsch and Fritsch, 2003; Bartelsman et al., 2004; Reynolds, 2005). However, with the exceptions of Knight (1921) and Schumpeter (1947), for a long time the entrepreneur's role in the economy remained largely unexplored (Baumol, 1968). For Knight (1921) risk associated to business undertakings involves a predictable and therefore insurable part and another unpredictable portion which he refers to as pure 'uncertainty'. He views entrepreneurs as the actors ready to handle that uncertainty in exchange for entrepreneurial profits. Schumpeter (1947) on the other hand identified the importance of entrepreneurship as being related to the process of 'creative destruction' - the constant process by which industries evolve, replacing their old elements with new ones. In his view, the role of the entrepreneur is to exploit innovations and thereby to act as the main agent for the creative destruction process by reforming or revolutionising the existing production routine (Schumpeter, 1947). While Knight views entrepreneurs as the ones handling the financial risks involved with their undertakings, Schumpeter considers that this financial risk may be transferred to investors so that it becomes a more controlled risk (Gray and Blundel, 2010). Today, it is generally acknowledged that most new firms do not, at an individual level, create the radical changes described by Schumpeter (Reynolds, 2005). Still, Knight's (1921) and Schumpeter's (1947) views are recognised as having served as foundations for entrepreneurship research (Baumol, 1968).

Baumol (1968) drew attention to the lack of consideration given to the entrepreneur's role in the economy. Since then, however, economists have investigated creative destruction by considering entry and exit rates in different industries and countries (Bartelsman et al., 2004). Regarding the magnitude of this renewal phenomenon, it is estimated that, in industrial countries, market total turnover rates - measured as the sum of firms' entry and

exit rates in an industry in a year - range from 10% to 20% per annum (Ahn, 2001; Bartelsman et al., 2004). In addition, the degree of mortality in the early years of companies' life is known to be relatively pronounced.

In order to look at such firm demographics, in 1994 the French National Statistical Institute INSEE set up a dedicated database called SINE ("Système d'Information sur les Nouvelles Entreprises") which follows new businesses during the first five years of their life. This SINE survey provides information about the types of businesses created, their founders and their founding environment. It has been undertaken every four years since 1994. Using three- and five-year survival rates, INSEE estimated that of the companies created in 2002, just over 65% survived more than 3 years and slightly above 50% more than 5 years (table 1). Though these survival rates increased between the first 1994 SINE cohort and the 2002 one, the fact that still almost one in two firms disappears within five years of start-up illustrates the difficulty that young companies have in establishing themselves let alone in achieving even modest growth.

Table 1: French start-ups – 3- and 5-year survival rates
Source (INSEE, 2010)

Companies created in 1994		**Companies created in 1998**		**Companies created in 2002**	
3-year survival rate	5-year survival rate	3-year survival rate	5-year survival rate	3-year survival rate	5-year survival rate
57.9%	45.8%	63.4%	50.8%	65.5%	51.9%

One note of caution when looking at these figures is that, while all of them make it possible to assess the level of discontinued activities, not all are illustrations of economic failure. For example, some firms may have been sold to other companies or closed for reasons related to personal issues for the owner. In some cases, when they are perceived as having enabled the former entrepreneur to pursue more promising projects, such closures may even be termed a success by the person (Gimeno et al., 1997; Bates, 2005). One French study analysing the fate of firms started in 1997 indicated that the 5-year closures reported for these firms could be broken down into 7.7% of positive outcomes (such as

company sold, retirement, other start-up project), 19.2% of issues independent from usual start-ups' difficulties (among which health or family problems) and "only" 73.1% related to true economic difficulties (Bonneau et al., 2005). In Sweden it was similarly shown that new ventures may be terminated for a variety of reasons, some of which are personal rather than linked to the organisation (Shane and Delmar, 2004). In fact, a recent international study suggests that in innovation-driven economies such as France, operational and financial reasons represent less than half of the reasons invoked by entrepreneurs for stopping their business. The majority of the reasons consist in "personal reasons, retirement, other job or business opportunities, or even the opportunity to sell the business" (Bosma and Levie, 2010, p.6).

That said, French results concerning survival of new ventures appear in line with international figures. In a study using data from 24 countries, Bartelsman et al. (2004) estimate that 20 to 40% of new firms fail during the first 2 years of their life and only 40 to 50% survive more than 7 years. In addition, their results show that the survivors which pass the initial years tend to be larger in size than the ones forced to exit and that they tend to expand rapidly (Ahn, 2001; Bartelsman et al., 2004). This latter finding is also true for the French SINE data (INSEE, 2007a).

This constant churning process is thought to foster the allocation of resources to more productive uses. In fact, using data from the nineteen-nineties it has been observed that general productivity gains can be attributed to improvements at existing firms, to the development of new firms which survive the selection that takes place during the first years of their life and to the exit of obsolete firms (Audretsch, 1999; Barnes et al., 2001; Bartelsman et al., 2003; Cotis, 2007). In addition, another positive aspect attributed to entrepreneurship is job creation. Birch's (1981) assertion that the vast majority of the new jobs in the US were created by young, small firms received a lot of attention. The interest in his work manifested itself not only in the US but also in Europe, with which Birch (1989)

went on to compare the job-creation process in the US. In France, the impact of new companies on job creation and the fact that survivors tend to grow and develop are indeed highlighted by results from the SINE survey. For example, despite the fact that 48% of the firms started in 2002 had ceased their activity 5 years later, 87% (363,200 out of 416,000) of the jobs initially created by these start-ups were preserved after 5 years (INSEE, 2009).

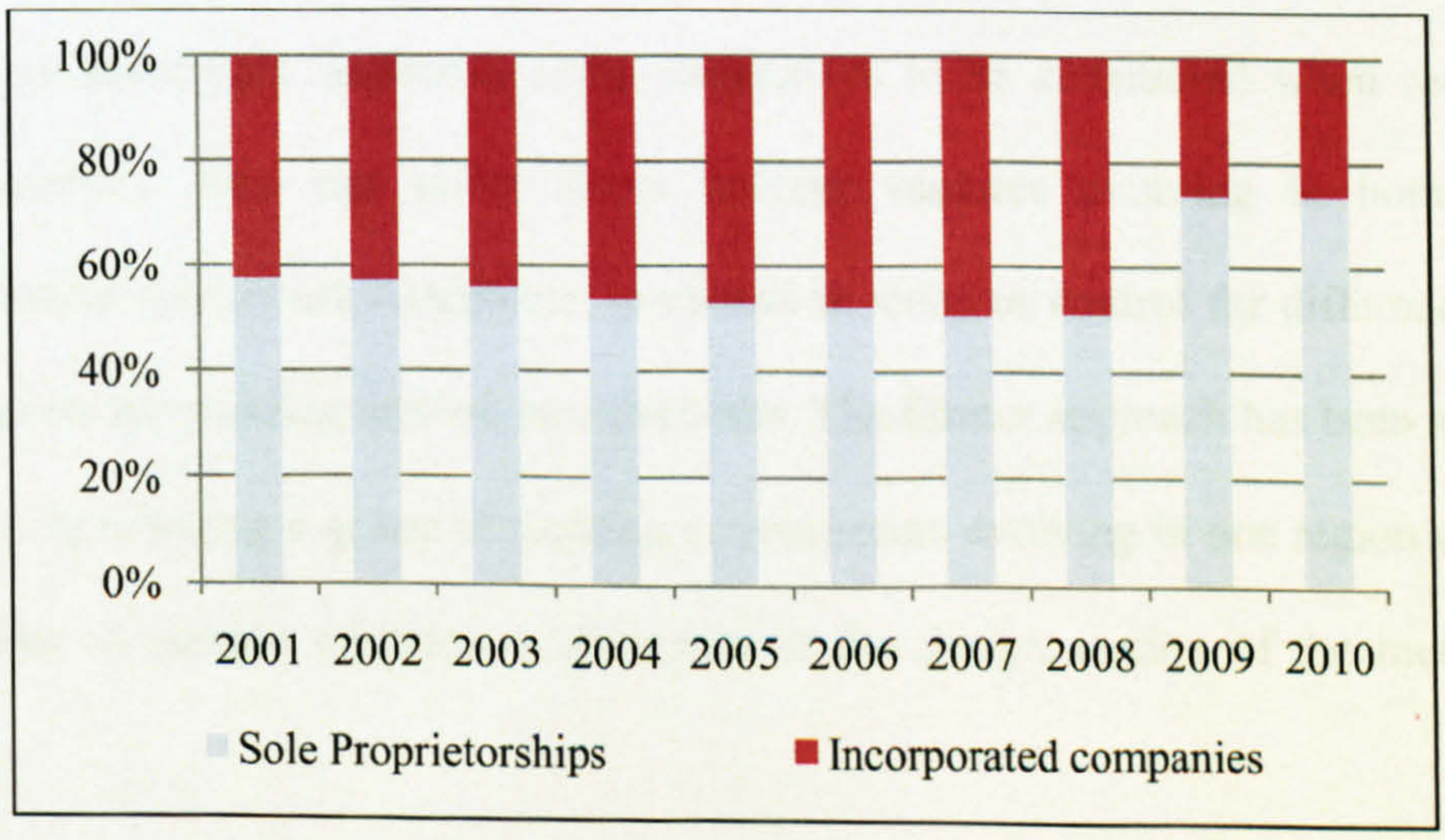
Not surprisingly therefore, entrepreneurship has been receiving constant attention from policy leaders. For example, in 2000 the European Commission identified (in its "European Charter for Small Enterprises") education and training for entrepreneurship, as well as successful e-business models and top-class small business support among ten key areas for action (EC, 2000). Following this, a Green Paper on Entrepreneurship was presented in 2003 and led to the publication of the "Action Plan for Entrepreneurship" in 2004 by the European Commission (EC, 2003a, b, 2004).

More recently, recognising the vital role played by entrepreneurs and SMEs in the European economy, the Commission implemented a "Small Business Act for Europe" (EC, 2008b) the aim of which is to "improve the overall policy approach to entrepreneurship, to irreversibly anchor the “Think Small First” principle in policymaking from regulation to public service, and to promote SMEs’ growth by helping them tackle the remaining problems which hamper their development" (EC, 2008b, p.3). In the words of Commission Vice-president Günter Verheugen, "The Small Business Act is based on the conviction that entrepreneurship and entrepreneurs should be applauded and rewarded; they are the backbone of our society. Being SME-friendly should become mainstream policy" (EC, 2008a, p.3). Several European countries are reported to have taken steps towards the implementation of this Act, partly in response to the financial crisis (in providing access to liquidity to SMEs) or as part of longer-term overhauls of their national organisation with respect to SMEs (EC, 2009).

Over the last three decades European policy leaders have also demonstrated their interest in entrepreneurship in their individual countries. In France a National Agency for Firm Creation was established in 1979 (APCE, 2002). More recently, echoing the European Commission recommendations, different laws have been implemented in order to promote entrepreneurship in France. The 2003 "Law for economic initiative" and the 2005 "Law in favour of SMEs" included measures aimed at promoting entrepreneurship. In 2008, a "Law for the modernisation of the economy" was explicitly presented as "acting for growth and employment" (Minefe, 2008b). "Making the entrepreneur the lever of a new policy" by encouraging self-employment, fostering the development of existing companies, supporting innovative firms and facilitating transmission of existing ones were among the objectives set for this law (Minefe, 2008a).

These measures culminated in January 2009 with the creation of the so-called "auto-entrepreneur" status aimed at promoting the development of self-employment in France. It was designed as a response to the observation that while new businesses in countries such as the UK, the US or Spain involved more than 70% self-employed persons, France showed a clear deficit in this domain (Hurel, 2008). Figure 2 below shows that with the introduction of the auto-entrepreneur scheme the proportion of start-ups initially registered as individual companies jumped from 51% in 2008 to 74% in 2009 in France.

Figure 2: Proportion of French companies started as sole proprietorships or incorporated companies
Source: INSEE (2011)



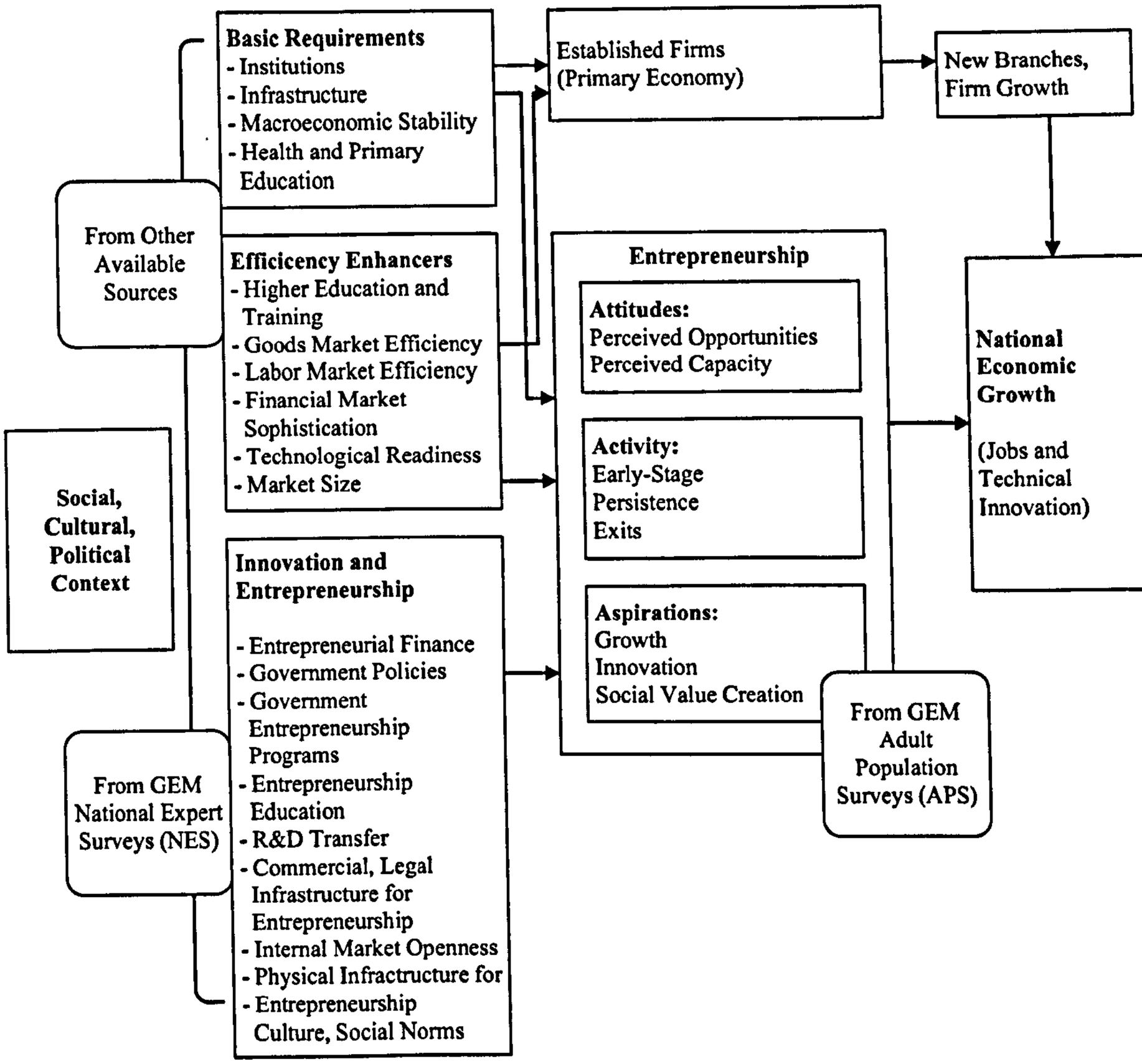
Returning to the overall economic implications of entrepreneurship, recognition of the lack of understanding of the phenomenon led to the launch of the Global Entrepreneurship Monitor (GEM) in 1999 with its central focus defined as "to bring together the world's best scholars in entrepreneurship to study the complex relationship between entrepreneurship and economic growth" (Reynolds et al., 2000). By undertaking the same survey using the same methodology annually in several countries and regions (59 countries in the 2010 survey), GEM has enabled scholars to undertake cross-country comparisons of entrepreneurial activity levels and characteristics of both the entrepreneurs and the types of projects they pursue (Kelley et al., 2011). In addition, in countries such as the UK, the large-scale deployment of the data collection has also made it possible to conduct cross-regional comparisons within the country (Brooksbank et al., 2008).

The framework used by GEM allocates a specific place to entrepreneurship in the global economic context. It also differentiates between existing and new firms' contributions to national economic growth, while at the same time recognising their interrelated nature (figure 3). The policy initiatives just discussed are aimed at improving the entrepreneurial framework conditions of a country and these appear in the left-hand half of the figure. The present thesis focuses on the middle "entrepreneurship" part of the framework. More specifically it analyses the early-stage activity.

The fact that GEM chooses the social, cultural and political environment as the starting point of its framework illustrates some alternatives to be considered when researching entrepreneurship. One can either select nascent ventures evolving in homogeneous entrepreneurial framework conditions, or choose to study or control for differences in the environments surrounding nascent entrepreneurs. The former approach has been adopted in this study by selecting a group of aspiring entrepreneurs evolving in one region of France. This choice of sample selection is discussed in the design section of the methodology

chapter (chapter 3) and the associated limitations for the study are acknowledged in the concluding chapter (chapter 7).

Figure 3: Global Entrepreneurship Monitor (GEM) model
Source: Bosma and Levie (2010, p.12)



Some of GEM's analyses focus on how environmental conditions may affect a nation's entrepreneurial activity level. In this study however, while recognising the importance of the context in which nascent entrepreneurs evolve, emphasis is placed on the micro components of the firm creation event by selecting individuals evolving in a common set of environmental conditions and observing how they interact within and with such an environment. This choice is in line with the stream of entrepreneurship research which, while acknowledging the importance of the general framework conditions in fostering entrepreneurship, has the objective of studying the micro foundations of this phenomenon.

The nature of this stream within the general field of entrepreneurship research is reviewed in the next section.

2.1.2 Defining entrepreneurship as a process

Today, scholars agree about the inherently complex, multi-faceted, dynamic, holistic and heterogeneous nature of the entrepreneurial phenomenon. In addition, given the variety of topics involved, researchers are urged to be very clear about the perspective they are using (Low and McMillan, 1988; Gartner, 1990; Bruyat and Julien, 2000; Gartner, 2001; Fayolle et al., 2005).

This has led to a variety of definitions and frameworks being proposed. For example, in a seminal article, Gartner (1985) suggested articulating the study of new venture creation around four interrelated aspects: the individual(s) who start the venture, the organisation which they create, the environment surrounding the new venture and the process by which the new venture is started. In his view, entrepreneurship is the "creation of organisations" (Gartner, 1988). Low and McMillan gave a similar definition of entrepreneurship as "the creation of new enterprise" but offered a different research objective: that "entrepreneurship research seeks to *explain and facilitate the role of new enterprise in furthering economic progress*" (Low and McMillan, 1988, p.141, emphasis in original).

However, for others entrepreneurship is not necessarily linked to new organisations and may also be present in existing ones. Drucker (1985) for example suggested that the key component of entrepreneurship is innovation, which can be capitalised on within existing firms or through the creation of new businesses. Stevenson and Jarillo (1990) also propose that entrepreneurship may be present within existing organisations. In addition for these authors that the fact of pursuing opportunities regardless of the resources one currently is in command of is what characterises the entrepreneurial act.

Kirzner (1982; 1997) sees entrepreneurial discovery as being related to an individual's 'alertness' or 'receptiveness' to opportunities not identified by others. Shane and Venkataraman (2000) chose to focus on such entrepreneurial opportunities and recommended a study of entrepreneurship along three major lines: the sources of the opportunities, the processes through which they are then discovered, evaluated and exploited, and the individuals who discover, evaluate and exploit them. So in contrast to Gartner's proposal, which involves the entrepreneurs' actions in the process of creating new organisations and considers the creation of an organisation as the outcome of the process, Shane and Venkataraman's framework places the entrepreneurs' role as discovering opportunities created by market disequilibrium and then evaluating and exploiting them. Their framework "does not require, but can include, the creation of a new organisation" (Shane and Venkataraman, 2000, p.3). Recent evidence seems to indicate that the study of nascent venturing processes includes both situations where entrepreneurial opportunities are, as suggested by Shane and Venkataraman, "discovered" and situations where they are, as suggested by Gartner, "enacted" (Gartner and Carter, 2003).

In recent years also, Bruyat and Julien (2000, p.165) have proposed that the scientific object of entrepreneurship research is the "dialogic between individual and new value creation, within an ongoing process and within an environment that has specific characteristics". Shane (2003, pp.4-5) has offered his view of entrepreneurship research as encompassing "explanations for why, when and how entrepreneurial opportunities exist; the sources of those opportunities and the forms that they take; the processes of opportunity discovery and evaluation; the acquisition of resources for the exploitation of these opportunities; the act of opportunity exploitation; why, when and how some individuals and not others discover, evaluate, gather resources for and exploit opportunities; the strategies used to pursue opportunities; and the organising efforts to exploit them". Alternatively, Davidsson (2005, p.36) defined entrepreneurship research as the study of

"the origin and characteristics of venture ideas as well as their contextual fit; of behaviours in the interrelated processes of discovery and exploitation of such ideas, and of how the ideas and the behaviours link to different types of direct and indirect antecedents and outcomes on different levels of analysis". All these definitions illustrate the multiple aspects embedded in entrepreneurship research.

In addition, another approach has developed since the beginning of the millennium and established itself as a major influence for entrepreneurship (Fayolle and Hernandez, 2007): the theory of effectuation. First proposed by Sarasvathy and Simon (2000) and subsequently developed by Sarasvathy (2001) this theory differentiates between causal and effectual decision processes. In causation processes, a specific goal is first identified and the individual then mobilises whatever means are supposed necessary to achieve that goal. In effectuation processes on the other hand, the person looks at the means they have under control and selects among the possible alternatives made possible by the possession of that set of means. In Sarasvathy's view, "the essential agent of entrepreneurship (...) is an effectuator: an imaginative actor who seizes contingent opportunities and exploits any and all means at hand to fulfil a plurality of current and future aspirations, many of which are shaped and created through the very process of economic decision-making and are not given a priori" (Sarasvathy, 2001, p.262).

The previous list could be seen as an illustration of how the variety of entrepreneurship research streams puts the field at risk of becoming just a potpourri of other disciplines (Low, 2001). It may also be seen as the illustration of an increasing structuring of the field as scholars converge around subsets of interest among the many topics embedded in entrepreneurship (Gartner et al., 2006). In fact, Verstraete and Fayolle (2005) identify four directions which they suggest may be regarded as paradigms in entrepreneurship research: the business opportunity, the creation of organisations, value creation and innovation.

These authors also illustrate the complementarity of the four perspectives and suggest that the notion of novelty is one aspect linking them all.

What is apparent from the above discussion however is that none of the proposed areas or definitions is comprehensive enough to include all the topics that interest entrepreneurship researchers. In the words of Gartner (2001, p.34): "The conundrum (...) is that the totality of current academic entrepreneurship research does not espouse (nor can it espouse) an entrepreneurship theory per se: rather entrepreneurship research espouses a diverse range of theories applied to various kinds of phenomena". For this reason it is necessary to state clearly where the research proposed here is situated.

Gartner's (1988) definition of entrepreneurship as "the creation of organisations" which was presented above is of particular interest to this thesis. From this perspective firm evolution is a process which, despite its heterogeneity and non-linear aspects, can be broken down into major stages. Reynolds and Miller (1992) named these chronological stages 'conception' (decision to start a new firm), followed by 'gestation' and 'birth' (gestation process leading to the establishment of a new firm) and 'infancy' and 'growth' (evolution after the new business entity has been established). Bhave (1994) similarly identified an 'opportunity stage', followed by a 'technology setup and organisation creation stage' and an 'exchange stage'. In parallel with this, potential businesses (not yet started) have been labelled 'emerging organisations', 'organisations-in-creation' (Katz and Gartner, 1988) or 'nascent businesses' (Kelley et al., 2011).

In studying the process of company creation, one important thing to bear in mind is that it is people who make it move forward (Bruyat and Julien, 2000; Gartner and Carter, 2003; Shane et al., 2003; Shook et al., 2003; Reynolds, 2005). In this process perspective, depending on the development stage at which their venture stands, entrepreneurs themselves have thus received different designations. In differentiating between 'nascent entrepreneurs', 'new business owners' and 'established business owners' GEM, for example,

looks at for how long the worked-on business has or has not been paying wages. Specifically, it uses the following definitions:

> - Nascent entrepreneurs are individuals actively involved in setting up a business they will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months.
>
> - Owner-managers of firms are classified as either new business owners if the entrepreneurs report that they own and manage a running business that has paid salaries, wages, or any other payments to the owners for more than three months, but not more than 42 months, or as established business owners if they own and manage a running business that has paid salaries, wages, or any other payments to the owners for more than 42 months.
>
> - The sum of the 'nascent entrepreneurs' and 'new business owners' measurements allows GEM to calculate the rates of early-stage entrepreneurial activity in each country for individuals aged between 18 and 64 years.
>
> (Kelley et al., 2011, pp.63-64)

Among these various definitions and frameworks, this thesis is positioned as aiming to study what happens during the so-called 'gestation phase' (Reynolds and Miller, 1992) or 'technology setup and organisation creation stage' (Bhave, 1994). The individuals surveyed are thus nascent entrepreneurs who have gone beyond Reynolds and Miller's conception stage and Bhave's opportunity stage. To summarise, they are individuals who have taken concrete actions towards company creation. More specifically the focus here is on nascent entrepreneurs contacting a professional support network during their preparation phase.

In order to contextualise this thesis, the next section therefore turns to a closer description of this nascent entrepreneurship phenomenon.

2.1.3 Describing the nascent entrepreneurship phenomenon

Investigation of what happens before companies are created has led to the understanding that firm creation numbers vastly underestimate the number of people working on start-up projects at any point in time (Reynolds, 2005). A large proportion of projects are abandoned on the way and it should be remembered that "the pre-start stage therefore culminates in decisions not to start as well as to start a venture" (Atherton, 2007, p.414). One question raised is therefore how to select criteria that objectively specify who should or not be considered a nascent entrepreneur or how to assess that a project qualifies as a nascent venture. In addition, what also interests researchers is the type of projects that aspiring company founders work on. In the discussion which follows an assessment of the degree of nascent entrepreneurship involvement in various countries is first provided. Approaches used to select nascent entrepreneurs are then described before turning to the variety of situations encountered and finally discussing some general findings about nascent venturing processes.

2.1.3.1 Nascent entrepreneurship activity levels

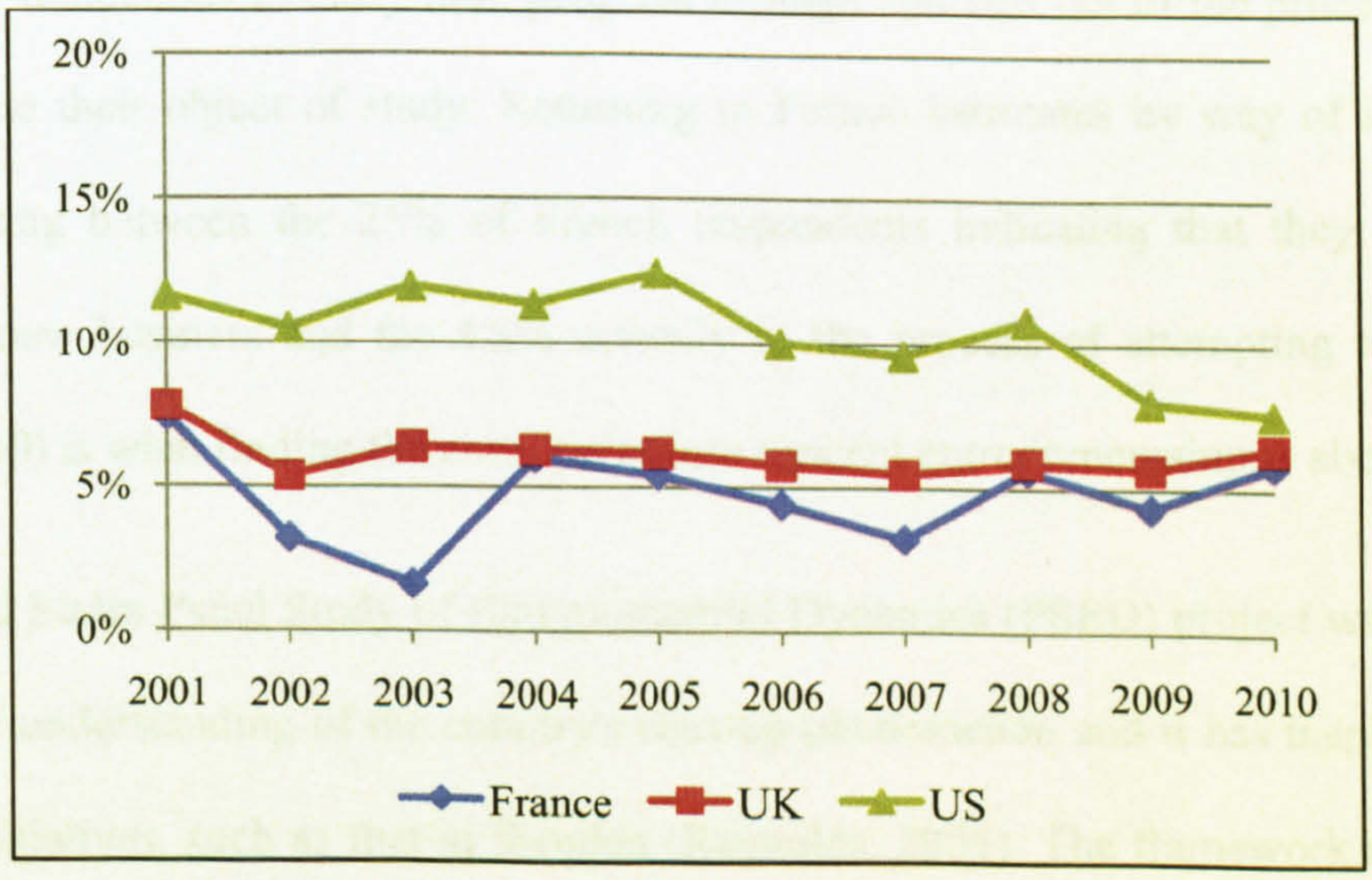
Locating (and thus studying) individuals in the process of setting up new companies (nascent entrepreneurs) is not an easy task. Nascent venturing projects are usually not recorded until the company actually begins its operations. Investigation of previous work status (employed or unemployed, previous level of employment responsibility) highlights that the majority of nascent entrepreneurs pursue their project in parallel with another job (Reynolds, 2005). Moreover, while their absolute number is large, they represent only a small proportion of the general population. The result is that, when looking to identify them among the general population, very large numbers of individuals need to be screened in order to obtain meaningful nascent entrepreneur samples (Reynolds, 2000; Davidsson, 2005).

French people, like most Europeans, are regularly shown to favour employee over self-employed status (EC, 2007a). A survey published annually in January shows that the proportion of French people interested in company creation (who "would feel like" starting or taking over a business, or starting their own independent activity) has been in the range of 20% to 30% over the past 10 years (IFOP, 2010). In January 2010 the proportion of respondents to this survey feeling like starting a company was 25%. In addition, considering more specifically individuals who not only "thought about it" but also had a specific project in mind and expect the start-up or takeover to happen within the two years following the survey, 4.8% of the January 2010 sample qualified (IFOP, 2010).

GEM estimated the proportion of French nascent entrepreneurs to be 3.7% in 2010 (Kelley et al., 2011). To put this in an international perspective, the evolution of the prevalence rate of early entrepreneurial activity (sum of the nascent entrepreneurs and new business owners) in France, the UK and the US in recent years, based on GEM data is presented in figure 4.

Figure 4: Early Entrepreneurial activity in France, the UK and the US

Sources: GEM annual reports (Acs et al., 2005; Minniti et al., 2006; Bosma and Harding, 2007; Bosma et al., 2008; Bosma et al., 2009; Bosma and Levie, 2010; Kelley et al., 2011)



Though the gap between these three countries has declined in recent years, over this period France has exhibited systematically lower rates of early entrepreneurial activity than the UK and the US. Given the economic impact of entrepreneurship - discussed in the first part of this chapter - this reinforces the importance of investigating the phenomenon in this country.

The people involved in the nascent venturing stage, the nascent entrepreneurs, are individuals taking concrete steps towards the creation of a new firm, but who are not yet considered new business owners (Carter et al., 1996). In this context it is important to set the boundaries for what is considered to be part of the nascent venturing stage and what is not, i.e. to provide observable entry and exit indications that set the boundaries for the process being studied and to identify observable components of the process.

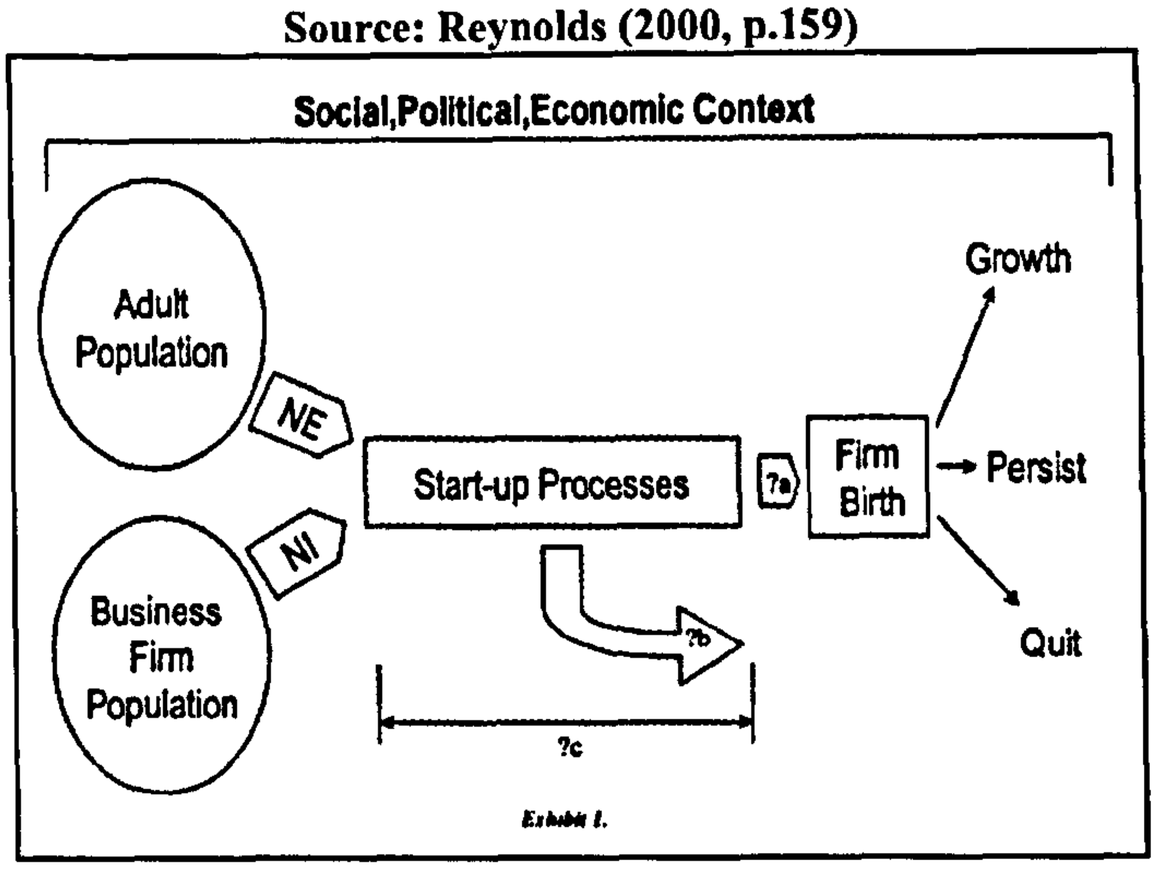
2.1.3.2 Boundaries and components of the process

Nascent entrepreneurship can be seen as a process consisting in a series of actions undertaken by individuals over a certain period of time, with the objective of creating a new organisation (Gartner and Carter, 2003). Scholars adopting this perspective have been looking for indications of entry into, progress through and exit out of the process in order to determine their object of study. Returning to French estimates by way of illustration, differentiating between the 25% of French respondents indicating that they "feel like" starting a new business and the 4.8% actually in the process of attempting to start one (IFOP, 2010) is what finding the entry point into nascent entrepreneurship is about.

The United States Panel Study of Entrepreneurial Dynamics (PSED) project was designed to enhance understanding of the country's start-up phenomenon and it has inspired similar national initiatives, such as that in Sweden (Reynolds, 2005). The framework used by the PSED (figure 5) illustrates that new firm creation can be the result of a process initiated either by individuals in the adult population (nascent entrepreneurship – NE), or by

individuals undertaking entrepreneurial ventures within existing firms as part of their job (nascent intrapreneurship – NI).

Figure 5: US PSED conceptual framework
Source: Reynolds (2000, p.159)



When looking to identify nascent entrepreneurs PSED uses the following question (Reynolds, 2000, p.170): Are you, alone or with others, now trying to start a new business? In addition, in order to qualify as nascent entrepreneurs, individuals also need to expect to be owners or part owners of the new firm, to have been active in trying to start the new firm in the past 12 months and the effort must still be in gestation phase (i.e. not an infant firm).

To identify these individuals one can also look for observable indications. To this effect, the actions that nascent entrepreneurs undertake have been under the scrutiny of scholars for the past two decades. A list of start-up activities (also called gestation behaviours) has been used as a basis for several studies, including the PSED (Gatewood et al., 1995; Carter et al., 1996; Gartner and Carter, 2003). The questions used by PSED in determining whether the activities have been undertaken or not, differentiating between start-up activities and firm registration activities, are listed in appendix 1.

Such gestation activities have been used by scholars to:

- Identify nascent entrepreneurs,

- Assess at which point in the process they start being surveyed,
- Measure their progress through the process, and
- Study the process itself.

For example, a minimum number of previously undertaken gestation activities can be set for an individual to qualify as a nascent entrepreneur (Davidsson and Honig, 2003; Samuelsson, 2004). The number of gestation activities undertaken prior to the initial survey also indicates at which point of the process they start being surveyed, with more gestation activities already undertaken indicating being closer to the new business stage than to the beginning of the nascent venture stage under investigation. In addition, in longitudinal analyses, progress into the process can be evaluated by analysing the evolution over time of the number and/or type of activities undertaken (Gatewood et al., 1995; Carter et al., 1996; Davidsson and Honig, 2003; Gartner and Carter, 2003; Samuelsson, 2004; Shane and Delmar, 2004).

Researchers have also had to identify when the process can be considered as being completed. Two major approaches, similar to the ones used to identify entry into the process, have been used to measure this: relying on the respondent's perception or using key identifiable events as milestones. The former involves asking the nascent entrepreneur whether, at the end of the observation period, the nascent venture has been started, abandoned, or has not yet started but is still being pursued (Carter et al., 1996). The 'identifiable milestones' approach on the other hand relies on indicators such as business registration, sales or profitability as indicators of a new venture 'birth event' (Carter et al., 1996; Davidsson and Honig, 2003).

Having identified a bounded portion of the process to focus on, some scholars have developed a specific body of knowledge about what happens before an organisation is actually created. This area of research investigates the early stage of the firm formation,

described previously as the process of organisational emergence (Gartner et al., 1992). Such a focus is acknowledged as having contributed to important advances in the field, among which is the demonstration of the fact that for most nascent entrepreneurs the process ends short of a new venture actually being created. It has also led to the recognition of the need to investigate the specific population not captured in statistics of new business creation (Aldrich and Martinez, 2001).

It is now necessary to turn to recent findings regarding nascent entrepreneurship, reviewing these along two lines: first, the types of projects pursued and reasons invoked by individuals for pursuing them and second, findings regarding the processes people implement to pursue these projects.

2.1.3.3 Types of projects pursued and reasons for getting involved in entrepreneurship

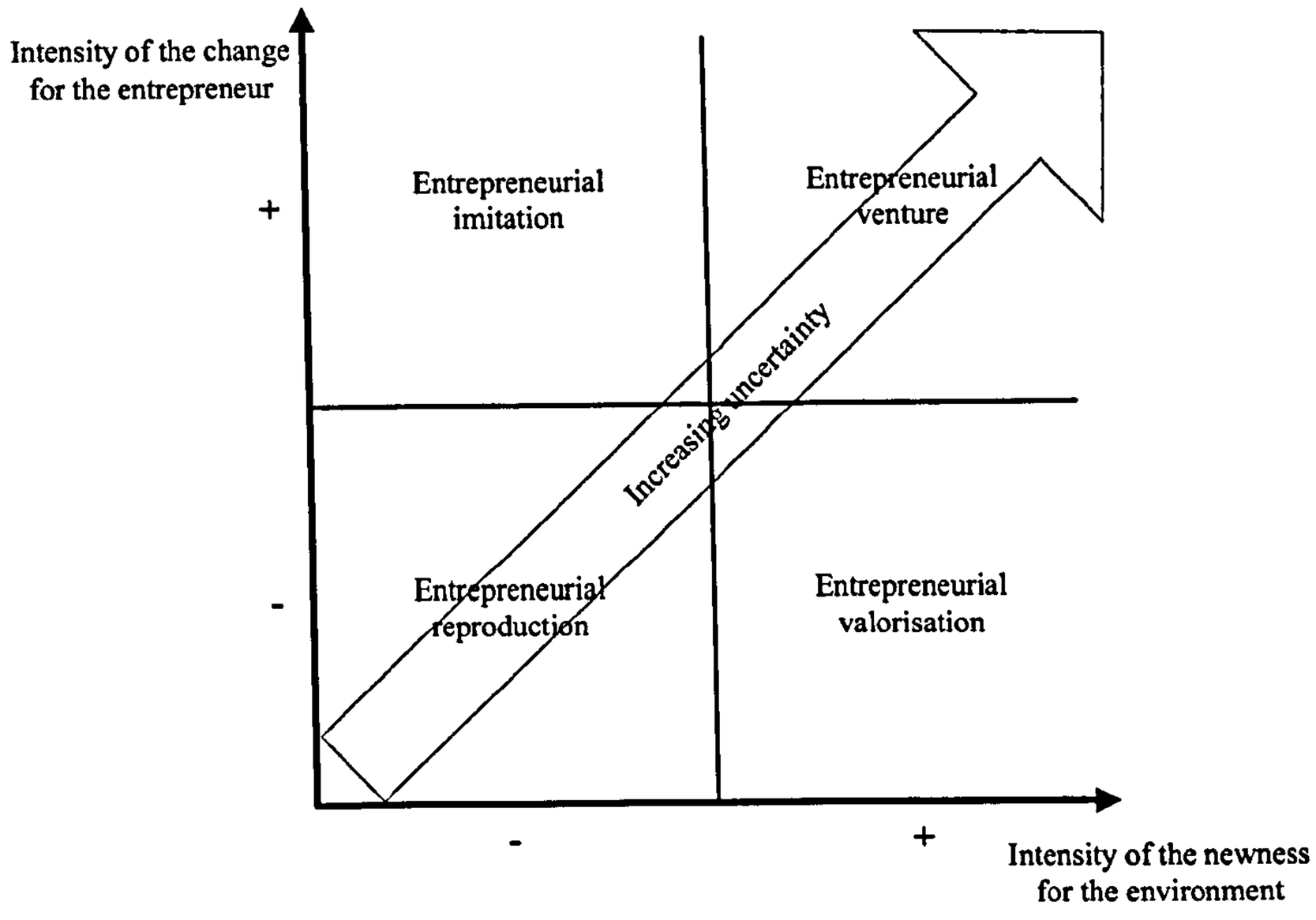
In order to differentiate between entrepreneurial ventures and often with the objective of clarifying what constitutes their object of study, scholars have looked for ways to classify the different types of entrepreneurial ventures. Some of their proposed typologies are discussed in the following paragraphs and the way this thesis positions itself in these contexts is then specified.

As some have argued that innovation is at the heart of entrepreneurial process (Schumpeter, 1947; Drucker, 1985; Brazeal and Herbert, 1999a), one approach used to differentiate among new ventures has consisted in evaluating the degree of innovation brought by the projects pursued. Shane (2003) suggested that "Schumpeterian" and "Kirznerian" opportunities co-exist in today's economies. The former include very innovative opportunities likely to have disruptive effects on existing economies, while the latter tend to be less innovative and primarily based on replication of "existing organisational forms" and correction of "errors and omissions made by prior market participants" (Shane, 2003,

pp.21-22). In an empirical study, Samuelsson (2004) for example distinguished between 'innovative' and 'reproducing' ventures by combining measures regarding the research and development focus, patenting, unique product/service and being alone in the market. In his Sweden-based study, he found that 88% of the new ventures in his sample could be classified as reproducing. In fact it is today acknowledged that the vast majority of nascent entrepreneurs work on 'reproducing' rather than 'innovative' projects (Samuelsson, 2004) and look to start in low barrier-to-entry sectors (Gray, 1998; Brooksbank, 2006). For these reproducing ventures, pursuing an opportunity in a context, market or geographical location different from what has been done before may indeed be seen as the innovative aspect of the project (Shane, 2003). As a result, innovative ventures are not the only ones that interest researchers. Today, most scholars consider the study of non-innovative projects as an integral part of entrepreneurship research (Samuelsson, 2004).

Bruyat (1993) proposed to classify entrepreneurial projects based on the change they induce at the levels of (1) the entrepreneur and (2) the environment (figure 6). For this author, depending on the change required at the level of the entrepreneur (e.g. need to develop new competencies or acquire new resources) and the magnitude of the innovation of the project for the environment (in terms of newness and value creation), four generic start-up situations may be identified: reproduction, imitation, innovation-valorisation and innovation-adventure. As illustrated in figure 6, uncertainty for the project is lowest for the first configuration and highest for the last one.

Figure 6: Bruyat's (1993) typology of new venture projects.
Sources: Bruyat (1993, p.287) and Bruyat and Julien (2000, p.174)



Another aspect considered when studying entrepreneurial projects is what initially triggered them. In addition to proposing a differentiation between successive stages of entrepreneurial processes, Bhave (1994) differentiated between 'externally stimulated' opportunity recognition (decision triggers opportunity search) and 'internally stimulated' opportunity recognition (opportunity identification triggers decision). He suggested that in the majority of the cases, the decision to engage in entrepreneurship precedes the identification of an actual opportunity. More recently, using US PSED data from 715 nascent entrepreneurs, Gartner and Carter (2003) also found a predominance of processes for which entrepreneurial desire came before the actual idea.

From a different standpoint, the GEM project differentiates between individuals entering the nascent venturing process either for reasons of necessity (all other options for work either absent or unsatisfactory) or opportunity (they want to exploit a perceived business opportunity) (Bosma and Levie, 2010). Analysis of GEM data shows that a significant positive correlation exists between the ratio of opportunity to necessity entrepreneurship

(proportion of people starting for opportunity vs. necessity reasons) and the transition rates from early-stage to established entrepreneurship, suggesting that there may be a systematic relationship between the motivation to start a business and the chances of succeeding (Minniti et al., 2006). In addition, in the UK the presence of both an individual level necessity push effect, driving people out of employment and into entrepreneurship, and that of an environmental demand pull effect, whereby lower unemployment rates send a positive demand signal and foster entrepreneurship, have been illustrated (Brooksbank and Thompson, 2008). Brooksbank and Thompson additionally suggest that between the two effects, the individual push effect seems to dominate. Also in the UK, the proportion of opportunity-driven entrepreneurs was found to be higher among people holding higher educational degrees than among people holding lower ones (Kwong et al., 2006). Furthermore, the respective proportions of necessity- and opportunity-driven entrepreneurship appear to be closely related to economic cycles as suggested by the recent increase in necessity-driven entrepreneurship as the recent crisis unfolded (Bosma and Levie, 2010). In fact, the proportion of 'reluctant entrepreneurs', individuals being driven to entrepreneurship by lack of other professional options should not be underestimated (Brooksbank, 2006).

In this thesis, the individuals who participated were people in contact with a large national French support agency. The majority of their projects fall into the 'reproduction' or 'imitation' categories in Bruyat's (1993) typology. The data collected here does not permit the differentiation between those who undertook externally- or internally-driven opportunity searches. However, when they were first surveyed 87% of the participants said they had identified a business opportunity. In addition, when asked whether they were considering entrepreneurship for opportunity or necessity reasons, they answered as follows: 39.0% because they had identified an opportunity, 12.8% by necessity and 48.2% for both reasons. This appears similar to GEM's evaluation of necessity-driven

entrepreneurship as representing 14% of the activity in France in 2009 (Bosma and Levie, 2010).

While the research discussed above focuses on identifying different categories of entrepreneurial projects, another line of inquiry has been interested in investigating how these ventures are created. This stream, which is interested in whether patterns, which more surely lead to start-up rather than withdrawn outcomes can be identified, is now discussed.

2.1.3.4 The nascent venturing processes

During the nascent venturing phase, the number of gestation activities undertaken and the frequency with which they are undertaken appear to have an impact on the process outcome (Newbert, 2005; Lichtenstein et al., 2007). However, no common sequence seems to emerge among the nascent ventures studied regarding the order in which the nascent entrepreneurs carry out these activities. As a result, the nascent venturing process is thought to evolve through a variety of combinations of these activities (Gatewood et al., 1995; Carter et al., 1996; Gartner and Carter, 2003; Samuelsson, 2004; Reynolds, 2005).

In fact, broader systematic use of gestation behaviours lists by scholars interested in nascent entrepreneurship has started to provoke reconsideration of earlier research. For example, while Carter et al. (1996) initially advocated a focus on action-oriented behaviours, Shane and Delmar (2004) provided evidence indicating that undertaking planning activities (measured as having completed a business plan) before undertaking more action-oriented marketing activities could reduce the risk of termination for the venture. The positive effect of business planning on persistence with the process has recently been supported by other researchers, though they have also suggested that the most appropriate timing for actual planning appears to depend on the financial and competitive uncertainty facing the venture (Liao and Gartner, 2006). These authors suggest

that in situations when financial and competitive uncertainty are high, planning early increases the chances of persisting in the process, while in more certain environments, planning later has the same effect. In addition, a recent study investigating whether the number of activities undertaken depends on the market dynamism (in relation to new technologies) in which the new firm is expected to compete suggests that the number of gestation activities predicting new firm formation appears to decrease as market dynamism increases (Newbert, 2005).

In their study Liao and Gartner (2006, pp.35-36) also point out that, in an entrepreneur's mind, planning might be in a somewhat less "formalised format than many scholars and consultants would expect". Differentiating between unwritten, informal and formally written business plans, they found that only one-third of their respondents to this question had actually completed a formally prepared business plan and the proportion was even lower (approximately 25%) for those who had reported early planning (Liao and Gartner, 2006). This concurs with Sarasvathy (2001) who contended that when considering the actual processes used to implement a start-up project (and contrary to what seems to be advocated based on causal approaches) most entrepreneurs start only with a broad objective in mind (such as exploiting an idea, making some money or creating some lasting institution for example) and refine it as the project moves forward by means of effectual reasoning.

In this first section, the importance of studying entrepreneurship has been examined. This thesis was then positioned within the general context of entrepreneurship as specifically targeted to the nascent entrepreneurship phase. A general overview of this phase was then provided to illustrate the variety of situations encountered in it. In the next section some of the theoretical approaches used by scholars specialised in analysing pre start-up phenomena are discussed. These will serve as the basis for building the models used in this research.

2.2 Nascent entrepreneurship research: a variety of approaches

When studying nascent entrepreneurship processes, research in the field borrows from a variety of disciplines as a basis for its own knowledge and theory-building. Among these may be cited: traits and characteristics approaches (Zhao and Seibert, 2006; Rauch and Frese, 2007; Zhao et al., 2010), intention-based approaches (Shapero and Sokol, 1982; Ajzen, 1991; Krueger et al., 2000), learning theories (Bates, 2005) and resource-based theory (Wernerfelt, 1984; Barney, 1991; Conner, 1991; Alvarez and Busenitz, 2001; Barney et al., 2001). With reference to the last of these, among the specific resources useful to entrepreneurs, human and social capital have attracted the attention of scholars (Davidsson and Honig, 2003; De Clercq and Arenius, 2006; Kim et al., 2006). In addition, attempts to evaluate the impact of professional support provided to nascent or established entrepreneurs have been made (Chrisman and McMullan, 2000; McMullan et al., 2001; Wren and Storey, 2002; Chrisman et al., 2005). The theoretical backgrounds that these different perspectives rely on are now reviewed and the findings they have generated discussed. To conclude this section, the connections between them are then illustrated.

2.2.1 Traits and characteristics approaches

In the nineteen-sixties and -seventies, investigations into entrepreneurship relied mainly on trait-based approaches. Scholars were looking to understand what made entrepreneurs so special and what differentiated them from non-entrepreneurs (Brockhaus, 1982; Gartner, 1988; Boyd and Vozikis, 1994). Among areas offered for investigation were, for example:

- achievement motive or 'need for achievement' and which represents "the desire to do something better, faster, more efficiently, with less effort" (McClelland, 1976, p.A);

- risk-taking propensity: "the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation

providing less reward as well as less severe consequences than the proposed situation" (Brockhaus, 1980, p.513);

- locus of control: where "internal versus external control refers to the degree to which persons expect that a reinforcement or an outcome of their behaviour is contingent on their own behaviour or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable" (Rotter, 1966, quoted in Rotter, 1990, p.489).

However, such trait-based approaches led to rather disappointing results when it came to providing a link to the actual behaviour and to identifying entrepreneurs or differentiating them from successful managers (Brockhaus, 1982; Gartner, 1988; Ajzen, 1991; Boyd and Vozikis, 1994). In fact, one contribution made by these approaches was the realisation that "differences among entrepreneurs and among their ventures are as great as the variation between entrepreneurs and non-entrepreneurs and between new firms and established firms" (Gartner, 1985, p.696). Some problems associated with trait-based approaches were that they had been developed in contexts different from entrepreneurship and tended to measure general tendencies ill-suited for entrepreneurial contexts (Robinson et al., 1991).

As a result voices calling for more process-oriented studies and analyses of the actions undertaken by entrepreneurs started to be heard and an academic orientation towards intention-based approaches emerged (Bird, 1988; Gartner, 1988; Katz and Gartner, 1988; Low and McMillan, 1988; Krueger and Carsrud, 1993; Boyd and Vozikis, 1994). In addition, the identification of self-efficacy (Bandura, 1986) as a task-related measure of self-confidence rather than a general trait exhibited by a person under all circumstances also seemed to offer interesting research avenues (Boyd and Vozikis, 1994).

In recent years however, it has been suggested that the rejection of these trait approaches has led to the exclusion of some important aspects of the role of human agency in

entrepreneurial undertakings (Shane et al., 2003). Reviewing a series of motivations possibly influencing enterprising individuals, Shane et al. offer several possible explanations (including design, definition and operationalisation issues) for why trait-based analyses originally led to disappointing results. In fact, a meta-analytical study specifically dedicated to investigating the relationship between achievement motivation and respectively entrepreneurial career choice and entrepreneurial performance suggested the existence of a positive relationship between them (Collins et al., 2004). Similarly, following a meta-analysis of articles relating various specific personality traits with business creation and success, Rauch and Frese (2007) came to the conclusion that stress tolerance was linked to business creation and innovativeness, proactive personality and generalised self-efficacy were linked to business success. More recently, Zhao et al. (2010) have found personality characteristics such as openness to experience, conscientiousness, emotional stability and extraversion to be associated with both entrepreneurial intention and performance. In addition, they also found risk propensity to be related to entrepreneurial intention. Among the dimensions they investigated, only agreeableness was not related to either entrepreneurial intention or performance.

The possible effect of not only traits but also demographic characteristics on entrepreneurial activity has also been suggested by scholars. For example, demographic analysis shows that both gender and age appear to have an impact on participation in entrepreneurial activity (Minniti et al., 2006). As an illustration, data from GEM has consistently shown over the years that individuals who are 25 to 34 years old represent the most prevalent age group for early entrepreneurial activity; in addition men are more likely to start a business than women and this gender gap is more pronounced in the high-income countries (among which France) studied by GEM (Bosma and Levie, 2010). The large-scale GEM investigation in the UK has also permitted more refined investigations showing

that not only gender but also ethnicity have inter-related impacts on entrepreneurial attitudes and involvement in entrepreneurship (Kwong et al., 2009).

While the traits and characteristics approach, after having been somewhat rejected, seems to have found new advocates in recent years (Baum et al., 2001; Collins et al., 2004; Zhao and Seibert, 2006; Rauch and Frese, 2007; Zhao et al., 2010), another line of inquiry developed from the late nineteen-eighties has been drawing increasing attention since then: the intention-based approach. Attention will now be turned to these intention models and their constituent variables.

2.2.2 Nascent entrepreneurship as an intentional behaviour

The intentional nature of entrepreneurial undertakings has long been agreed upon. Actual start-up is preceded by intention, which is in turn illustrated by a series of actions including information gathering and assembling of resources, with the objective of launching the activity (Bird, 1988; Bird and Jelinek, 1988; Katz and Gartner, 1988). The order and nature of the start-up activities undertaken vary between projects (Carter et al., 1996; Shane and Delmar, 2004). As a result, intention-based models, which enable the acknowledgement of the process nature of the phenomenon and of the heterogeneity of the situations to be studied, have long been identified as offering a promising research framework (Shapero and Sokol, 1982; Bird and Jelinek, 1988). Today, research relying on intention models remains very topical (Carsrud and Brännback, 2009).

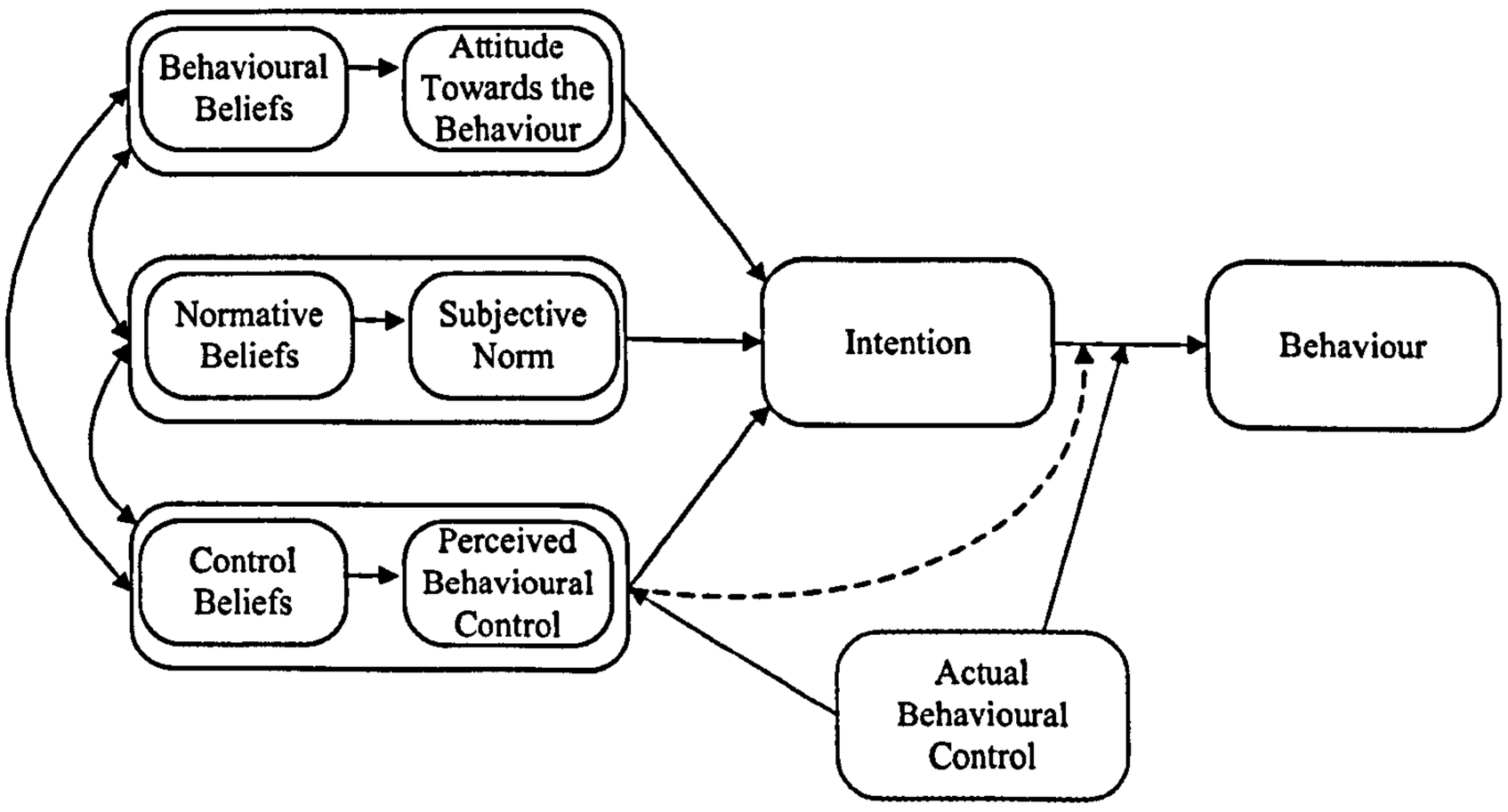
In the following sub-sections some of the intention-driven models that have been proposed over the years are first presented globally. After this their most common constituting constructs are reviewed individually starting with attitude / attractiveness / perceived desirability, followed by subjective / social norm and then perceived behavioural control / entrepreneurial self-efficacy / perceived feasibility. Recent findings based on such approaches are then discussed.

2.2.2.1 Intention-based approaches

One of the founding theories in the intention-based line of research is the Theory of Planned Behaviour (TPB) developed by Ajzen (1991). In earlier work, Fishbein and Ajzen (1975) had proposed in their Theory of Reasoned Action (TRA) that the immediate antecedent of the performance of a behaviour is one's intention to undertake it (Ajzen, 1985). They contended that intention was determined by attitudes towards the behaviour and social pressure and that these two elements were in turn influenced by beliefs which constituted the 'building blocks' of their theory of reasoned action (Fishbein and Ajzen, 1975; Ajzen, 1985).

Elaborating on this original framework by recognising that the actual performance of some behaviours may not always be under the full volitional control of the individual, Ajzen (1985; 1991) added perceived and actual behavioural control components to the original TRA framework to generate the theory of planned behaviour in the form now used by scholars (figure 7).

Figure 7: Ajzen's (1985) Theory of Planned Behaviour (TPB)
Source: Ajzen. http://people.umass.edu/aizen/tpb.diag.html - accessed Dec. 1, 2008



He originally proposed that the intention to *try* (emphasis in original) performing a behaviour is the immediate antecedent to the actual attempt and to the strength of the

attempt (Ajzen, 1985). However, after further investigation he suggested that defining the model's variables in relation to actual behavioural performance (rather than in relation to trying to perform the behaviour) was appropriate (Ajzen, 1991) and the model is now used by scholars with this revised formulation. Perceived behavioural control is closely related to the concept of self-efficacy (Ajzen, 1985; Bandura, 1986), which refers to "judgments of what one can do with whatever skills one possesses" (Bandura, 1986, p.391). Actual behavioural control is also included in the picture to recognise that external elements or a discrepancy between perceived and actual control may impede or foster the transformation of intention into actual behaviour (Ajzen, 1985).

This theory has been used to study a variety of social behaviours. In a recent meta-analysis of 185 studies using TPB, Armitage and Conner (2001) found attitude towards the behaviour, subjective norm and perceived behavioural control to account for 39% of the variance in intention. Furthermore, they found intention and perceived behavioural control to account for 27% of the variance in behaviour. In practice, actual behavioural control being difficult to assess, it is mainly the direct impact of perceived behavioural control on behaviour and its indirect impact via intention which are studied (Armitage and Conner, 2001).

While the theory of reasoned action and the theory of planned behaviour were developed for a wide rage of social actions, a different intentional model dedicated to entrepreneurship, the entrepreneurial event formation model (figure 8), was developed in the same period by Shapero and Sokol (1982). These authors view entrepreneurial formations as "the result of interacting situational and cultural factors" (Shapero and Sokol, 1982, p.87). For them, 'displacements', or triggering events, may push or pull someone to entrepreneurship. Such displacements can be negative (job loss, divorce), circumstantial (out of army, school, jail) or positive (offers for collaboration or financing). In addition, they contend that *perceived desirability* and *perceived feasibility* impact the process of

company formation. In their model, desirability includes both cultural and social factors and thus can be viewed as combining Ajzen's (1991) attitude and subjective norm components and perceived feasibility resembles the perceived behavioural control of the theory of planned behaviour (Krueger et al., 2000).

Figure 8: Shapero and Sokol's (1982) entrepreneurial event formation model
Source: Shapero and Sokol (1982, p.83)

Life path change
Negative displacements:
Forcefully emigrated
Fired
Insulted
Angered
Bored
Reaching middle age
Divorced or widowed
Between things:
Out of army
Out of school
Out of jail
Positive Pull:
From Partner
From Mentor
From investor
From customer

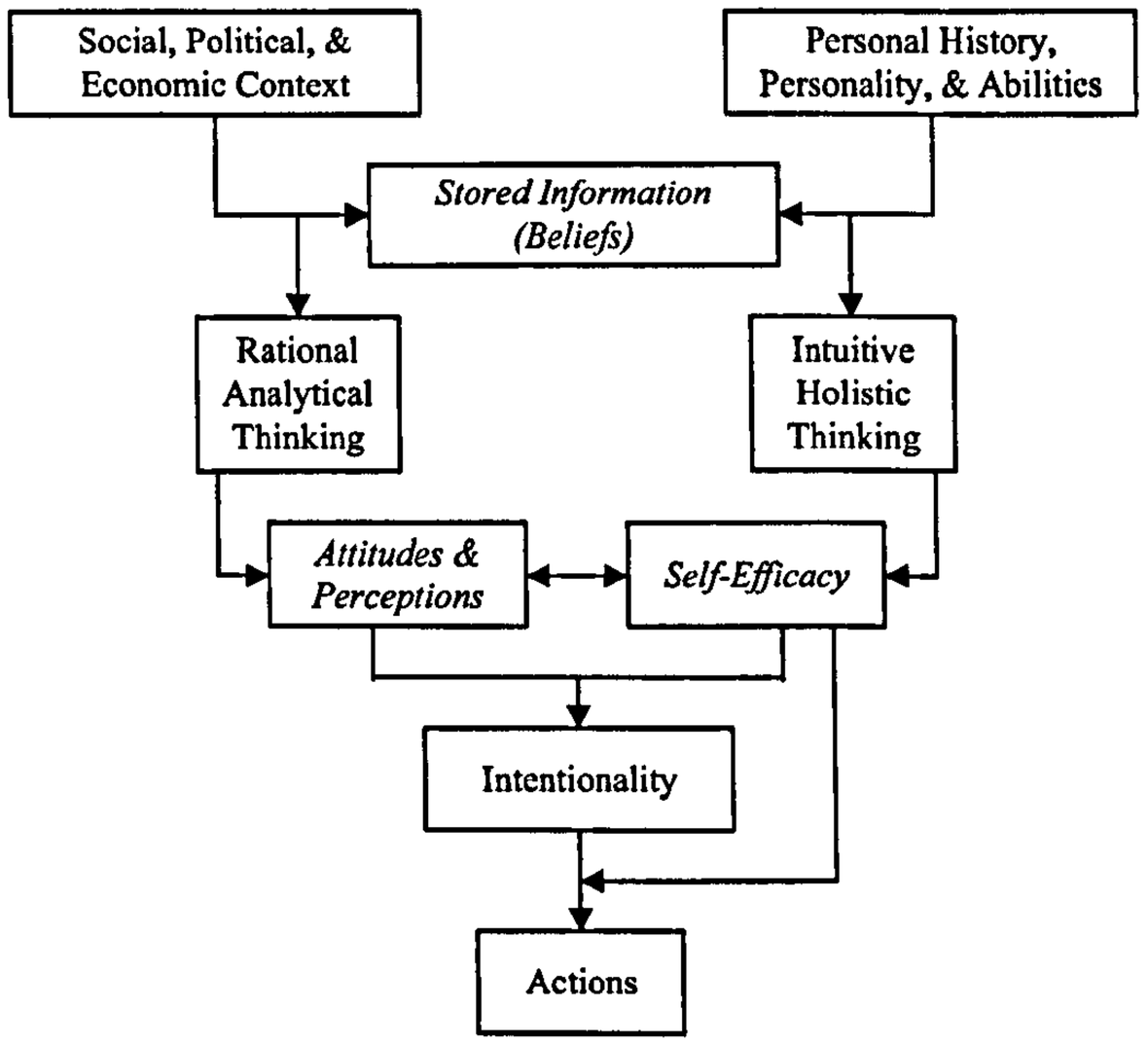
Perceptions of Desirability
Culture
Family
Peers
Colleagues
Mentor

Perceptions of Feasibility
Financial Support
Other Support
Demonstration effect
Models
Mentors
Partners

Company Formation

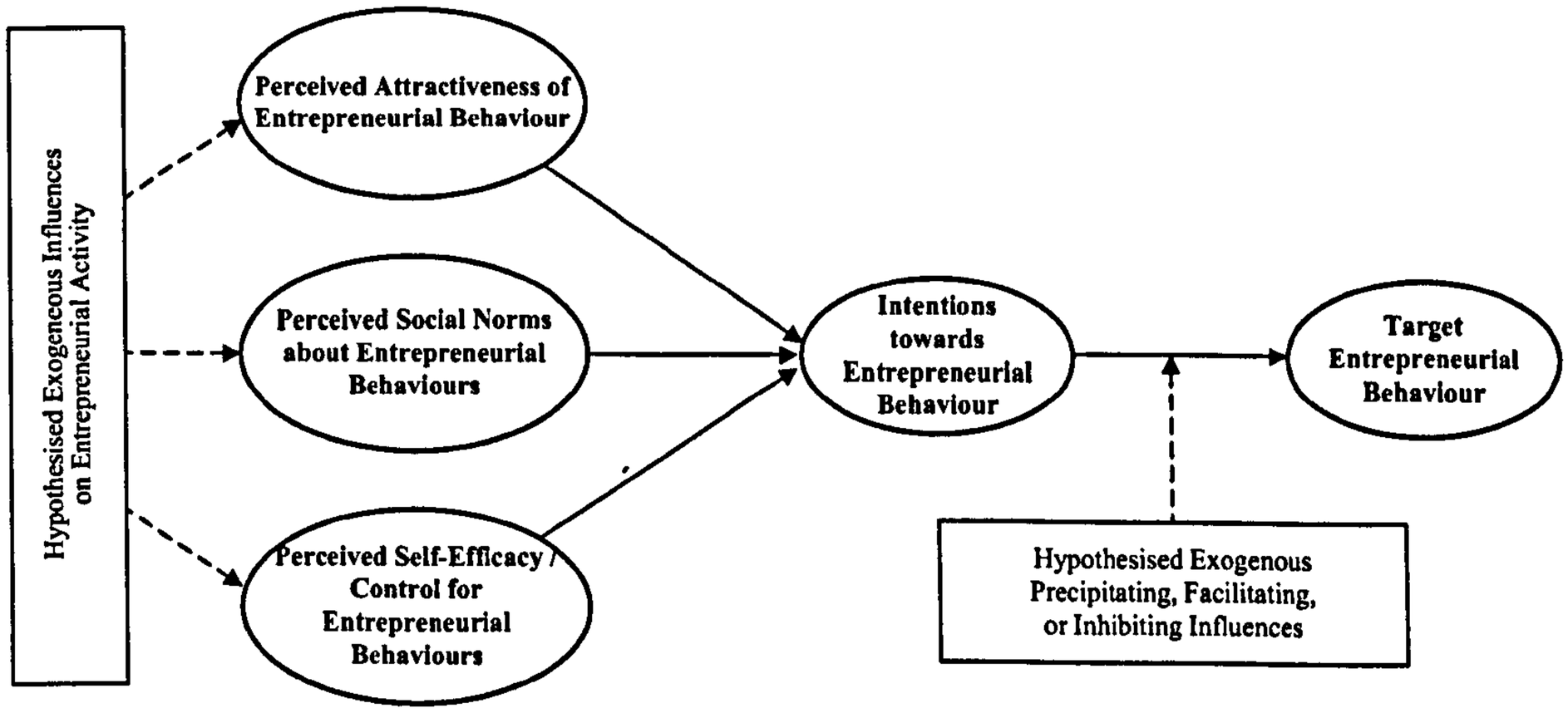
Other intention-based approaches have been proposed to study entrepreneurial phenomena and seek to understand why some people and not others form the intention of becoming entrepreneurs. For example, Bird (1988) proposed that entrepreneurial intentions influence the focus and actions directed towards start-up by aspiring entrepreneurs and contribute to moulding the new business. She described these intentions as arising among both general and personal contextual influences which shape a person's analytical and intuitive thinking processes. Bird's model of the "contexts of entrepreneurial intentionality" was later enriched by Boyd & Vozikis (1994) who proposed the addition of self-efficacy, "a person's belief in his or her capability to perform a given task" (Boyd and Vozikis, 1994, p.66) to her original framework (figure 9 - Elements in italics represent the additions made by Boyd and Vozikis to Bird's original design).

Figure 9: Boyd and Vozikis' revision of Bird's (1988) contexts of entrepreneurial intentionality model
Source: Boyd & Vozikis (1994, p.69)



Based on these earlier propositions, different adaptations to entrepreneurship have since been developed. Krueger and Carsrud (1993) proposed to adapt Ajzen's (1991) TPB to the field and integrate exogenous influences, as in the model presented in figure 10:

Figure 10: Krueger and Carsrud's (1993) intentions towards entrepreneurial behaviour model
Source: Krueger and Carsrud (1993, p.323)

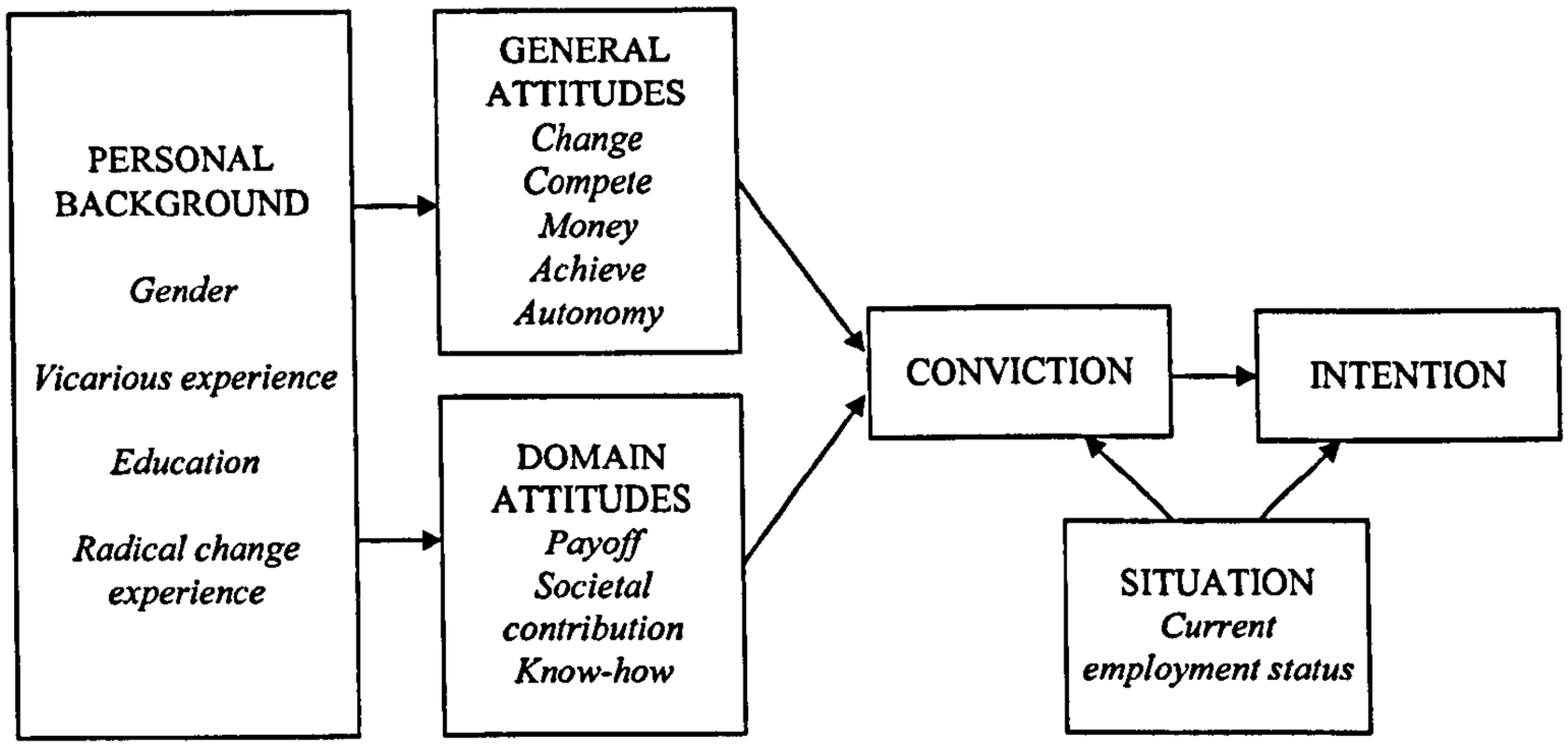


Davidsson (1995) chose to integrate demographic characteristics in an intentional framework in order to investigate whether their effect on intention could be mediated by

both general and domain attitudes. Like Shapero and Sokol's (1982), his framework includes an element of displacement in the form of current employment status (figure 11).

Figure 11: Davidsson's (1995) economic-psychological model of determinants of entrepreneurial intentions

Source: Davidsson (1995, p.5)



Regardless of the framework selected, intentional approaches have been identified as being particularly adapted when the individuals surveyed face important career choices (Krueger, 1993). In addition, the fact that intention-based frameworks permit the analysis of the determinants of a behaviour before actual action has also been highlighted as an attractive feature. It eliminates hindsight biases (Krueger, 1993) which have been found to be particularly prominent when asking individuals to recall their entrepreneurial experiences (Cassar and Craig, 2009). Such models therefore seem very adapted to the context of this thesis which involves working-age adults involved in the process of collecting information regarding company start-up.

Entrepreneurship research using such intention-based approaches has spread significantly in recent years, especially for the study of the determinants of entrepreneurial intentions of students regarded as potential future entrepreneurs (Kolvereid, 1996b; Krueger et al., 2000; Autio et al., 2001; Tounés, 2006; Boissin et al., 2007; Linan, 2008b). Intentional frameworks have also shown their usefulness in investigating start-up intentions of French public sector researchers (Emin, 2004) or, by measuring longitudinal evolution of key

elements of the model, in analysing the impact of entrepreneurship teaching programmes on their participants (Fayolle et al., 2006; Souitaris et al., 2007). This latter use was one of the triggers for considering such frameworks in the context of this thesis.

In the present research, the study framework is derived from the adaptation of Ajzen's (1991) theory of planned behaviour to the specific context of entrepreneurship proposed by Krueger and Carsrud (1993). The three major antecedents of intentions identified by these authors will therefore now be reviewed, starting with attitude towards entrepreneurial behaviour, which in the context of this study is also being linked to opportunity costs associated with entrepreneurial career choices.

2.2.2.2 Attitude, attractiveness or perceived desirability and opportunity costs

Attitude towards a behaviour reflects the "dispositions to respond with some degree of favourableness or unfavourableness to a psychological object" (Ajzen and Gilbert Cote, 2008, p.289). In other words, it represents a "learned pre-disposition to respond in a consistently favourable or unfavourable manner with respect to a given object" (Fishbein and Ajzen, 1975, p.6). In general, the more positive (negative) the attitude, the stronger should be the intention of a person to undertake (not to undertake) a certain behaviour (Ajzen, 1985). Attitudes can be expressed towards a general concept which requires no action from the person (global attitudes) or towards a specific behaviour or category of behaviours (the actual attitudes towards behaviours). While the former have little predictive value, the latter, which are directly related to identified acts, are the ones included in the theory of planned behaviour (Ajzen and Gilbert Cote, 2008). Attitude towards a behaviour has been linked to the perceived desirability present in Shapero and Sokol's (1982) framework (Krueger et al., 2000). It has been labelled "perceived attractiveness of entrepreneurial behaviour" in Krueger and Carsrud's (1993) adaptation of the TPB to entrepreneurial contexts.

In Ajzen's framework, attitude emanates from behavioural beliefs or "beliefs about a behaviour's likely consequences" (Ajzen and Gilbert Cote, 2008, p.302). Like Shapero and Sokol (1982), Ajzen and Gilbert Cote (2008, p.290) reaffirm that attitudes are thought to evolve and be "acquired not innate". Actual behaviour and exposure to the opinion of others have been identified as influencing attitude formation and change (Chaiken and Stangor, 1987). The presence of possible life cycle effects has also been demonstrated in the susceptibility to change of political attitudes (Visser and Krosnick, 1998). These authors suggested that attitudes were more susceptible to change at early and late adulthood times than in middle adulthood. It has also been posited that attitudes may be altered during or after important life events such as divorce or other important experiences (Krueger, 2007). This can be related to the notion of triggering events (either positive or negative) presented in Shapero and Sokol's (1982) entrepreneurial event formation model as influencing perceived desirability and perceived feasibility of entrepreneurial undertakings.

In the specific context of entrepreneurship, attitude is either analysed by looking at the outright appeal of entrepreneurship (Krueger et al., 2000; Boissin et al., 2008) or by opposing salaried to independent careers and investigating their relative attractiveness (Kolvereid, 1996b). Employment status choice has elsewhere been defined as "the vocational process in terms of the individual's decision to enter an occupation as a wage or salaried individual or a self-employed one" (Katz, 1992, p.30). Professional beliefs thought to influence this choice and career attitude include for example security, work load, social environment, willingness to avoid responsibility and career opportunity, which are considered as elements in favour of organisational employment, and economic opportunity, challenge, autonomy, authority, self-realisation and will to participate in the whole process, which are generally associated with self-employment (Kolvereid, 1996a).

Some researchers have linked career choices to the various utilities expected from each available job option (Evans and Leighton, 1989). Such job-related utility is expected to derive from various factors including the independence, risk and income levels it offers and one's relative valuation of these different attributes (Douglas and Shepherd, 2002). Looking at it from a different angle, it has also been shown that the relative attractiveness of different career options available to an individual depends on the opportunity costs associated with the different professional alternatives available (Gundry and Welsch, 2001; Cassar, 2006). The foregone benefits of the alternative career choice may be in the form of the abandoned salary (Amit et al., 1995; Cassar, 2006) but they also include personal aspects which can impact the perceived interest for an entrepreneurial career (Gundry and Welsch, 2001). For example, in their study involving female entrepreneurs Gundry and Welsch found that of their two responding groups, low- and high- growth-oriented, neither placed owning their business ahead of spending time with their family. The consequence of the presence of opportunity costs is that, if the activity that has to be relinquished in order to engage in an entrepreneurial career offers high perceived benefits, then the entrepreneurial activity should offer even higher perceived benefits for the individual to decide to undertake that route (Evans and Leighton, 1989; Amit et al., 1995).

2.2.2.3 Subjective or social norm and perceived desirability

The next element used in Ajzen's (1991) TPB is the subjective norm, which represents the social pressure felt by an individual to (or not to) undertake a certain behaviour (Ajzen and Gilbert Cote, 2008). The more the person believes that important referents think they should undertake the behaviour, the stronger should be their intention to undertake it (Ajzen, 1985). This element has also been labelled 'social norm' (Krueger and Carsrud, 1993). While Shapero and Sokol (1982) did not allocate an independent place for this in their framework, their concept of perceived desirability appears to encompass both social norm and the previously discussed attitude towards the behaviour (Krueger et al., 2000).

In the same way as attitude is grounded in behavioural beliefs, subjective norm is generated from normative beliefs, a person's "expectation or subjective probability that a given referent or individual group (...) would approve or disapprove of performing the behaviour under investigation" (Ajzen and Gilbert Cote, 2008,. p.302) and from the person's motivation to comply with this/these referent(s). In the context of entrepreneurship different referent groups have been deemed important. Family, close friends, professional mentors or "other people important to you" are among the most often quoted (Kolvereid, 1996b; Krueger et al., 2000; Kennedy et al., 2003).

The contribution of each normative belief (expected approval or disapproval from each referent concerning engagement in the behaviour) to the overall subjective norm is expected to be directly proportional to the individual's motivation to comply with the referent in question (Ajzen and Gilbert Cote, 2008). However, when studying social norm, not all authors consider the motivation to comply, as some focus only on the expected support from one's close circle without including this element (Emin, 2004; Carr and Sequeira, 2007). Using a different approach, some scholars have also suggested that social norms are impacted by both closer valuation, i.e. that placed on entrepreneurship by one's immediate circle, and general social valuation, i.e. that embedded in a country's culture (Linan et al., 2007). Others have chosen to focus only on the general environment of the individual, such as the culture prevailing in the university one is enrolled in (Autio et al., 2001) or the perceived valuation of entrepreneurial careers in the country (Thompson et al., 2007).

2.2.2.4 Perceived behavioural control, self-efficacy and perceived feasibility

Ajzen used the term 'perceived behavioural control' but he also acknowledged the parallel between this construct and Bandura's 'self-efficacy' (Ajzen, 1985; Bandura, 1986; Ajzen, 2002). Perceived behavioural control refers to "people's perception of the ease or difficulty of performing the behaviour of interest" (Ajzen, 1991, p.183), while self-efficacy relates to

how people judge their own capabilities and is independent of actual skills (Bandura, 1986). "Perceived self-efficacy is defined as people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has, but with judgments of what one can do with whatever skills one possesses" (Bandura, 1986, p.391). Though Bandura (1977) initially discussed self-efficacy in therapeutic contexts (notably with the objectives of treating phobias) it quickly became clear that this construct could usefully be transposed to business research, and especially to human resource and career management research (Gist, 1987; Lent and Hackett, 1987).

Following a review of TPB-based publications, Ajzen (2001, p.48) suggested that, of the perceived behavioural control and self-efficacy, the latter "may be a more important antecedent of intentions and actions". According to Ajzen, the difference between the perceived behavioural control and self-efficacy comes from the fact that perceived behavioural control includes both "self-efficacy, dealing largely with the ease or difficulty of performing a behaviour, and controllability, the extent to which performance is up to the actor" (Ajzen, 2002, p.11). Hence he views self-efficacy as one component, but not the only one, of perceived behavioural control. Concerning a possible link with Rotter's (1990) locus of control (discussed in sub-section 2.2.1), Ajzen (2002) argues that perceived behavioural control and self-efficacy may emanate from either internal or external sources and that a direct parallel cannot be drawn between the concepts.

As with the theory of planned behaviour original elements, self-efficacy evaluations are task-specific. This construct is thought to influence many human actions. When choosing between different activities individuals will likely favour the one(s) which they think they can ultimately complete successfully (Bandura, 1977, 1986). It is also considered to have an impact upon the amount of effort that people will be willing to invest in a given undertaking. For complex, difficult tasks, individuals with higher self-efficacy will likely

invest more effort and persist longer in the face of adversity than people with lower self-efficacy (Bandura, 1977, 1986). Given the recognised complexity of entrepreneurial journeys, this last remark highlights the applicability of self-efficacy to the field.

Self-efficacy is not static but rather evolves through four major influences, listed here in decreasing order of importance: enactive mastery (actual success in performing the task), vicarious experience (modelling by observing others' performances), verbal persuasion (suggestion provided by third parties that one will be successful in executing the task) and physiological arousal (somatic signs interpreted as indices of performance capacity) (Bandura, 1977).

It has been shown that the relationship between these influences and self-efficacy is not always clear-cut and depends on the cognitive mechanisms that individuals rely on when integrating self-efficacy information (Bandura, 1977, 1986). For example, one's experience in a given behaviour and success in undertaking it should increase one's self-efficacy, while failure should reduce it or, as originally stated by Bandura (1977, p.195), "successes raise mastery expectations; repeated failures lower them, particularly if the mishaps occur early in the course of events". However, Bandura himself suggested that the relationship may not be so straightforward when he recognised that "after strong efficacy expectations are developed through repeated success, the negative impact of occasional failures is likely to be reduced" (Bandura, 1977, p.195). In fact, the effect of self-efficacy influences appears to be dependent on the initial level of self-efficacy, the effort put into the task, the perceived level of difficulty and of control over task elements (Bandura, 1977, 1986; Gist and Mitchell, 1992). Concerning vicarious experience, the possibility for the individual to identify with the role model (based notably on similar demographic characteristics) seems to be important (Gist, 1987). In addition the facility demonstrated by the role model in achieving the behaviour also seems to play a role. Some degree of effort must be perceived

(rather than too easy achievement) for this vicarious experience to have a positive impact on self-efficacy (Gist, 1987).

In entrepreneurial contexts, specific scales are being developed to assess so called "entrepreneurial self-efficacy" (ESE) by trying to identify skills relevant to entrepreneurship (Chen et al., 1998; De Noble et al., 1999). Agreement concerning the appropriate self-efficacy scale still remains to be reached (Kickul and D'Intino, 2005). In addition, it has been suggested that ESE is a multi-dimensional construct and that the dimensions providing explanatory relevance may change depending on the stage of venture development being studied, the growth goals of entrepreneurs or the surrounding cultural influences (McGee et al., 2009). ESE scales are discussed in more detail in the methodology section.

2.2.2.5 Entrepreneurial learning and its link to intention models

In addition to entrepreneurial intentions, another topic has become increasingly important for scholars in recent years: entrepreneurial learning (Minniti and Bygrave, 2001; Politis, 2005; Rae, 2005a, b; Harrison and Leicht, 2008). Whether it is defined as the way "entrepreneurs accumulate and update knowledge" (Minniti and Bygrave, 2001, pp.7-8) or "learning to recognise and act on opportunities, and interacting socially to initiate, organise and manage ventures" (Rae, 2005a, p.324), this subject has risen to the forefront of scholars' preoccupations.

The importance for individuals of possessing updated knowledge in order to operate adequately in today's environment has been acknowledged for some time now (OECD, 1996). As recently as 2006, the European Commission insisted that governmental policies should be aimed at providing citizens with lifelong learning opportunities for key competences, among which it specifically identifies entrepreneurship (EC, 2006). One reason for the EC to insist on such learning is that it considers it as a major pre-requisite

for people to maintain 'employability', which Clarke (2007, p.262) defines as "potential to obtain and retain suitable employment within the current labour market context". In addition, entrepreneurial skills and knowledge are thought to be usable not only in the context of the creation of new ventures, but also in existing companies in need of such competencies (Rae, 2005b).

Following this line of thought leads one to propose that if involvement in a nascent venture project results in the development of new knowledge and skills for an individual, these may be useful for them regardless of whether they are put at work for their own venture or within another organisation. The amount of learning or reframing of previously acquired skills and competencies induced by an entrepreneurial experience may vary depending on the person's background and where they stand in their career (Rae, 2005b). Still, whatever the outcome at the projects level (in terms of start-ups), nascent entrepreneurs exit the journey transformed by the experiences they were confronted with. Hence, participating in a nascent venture not only involves attitudinal changes for the individual, as discussed previously, but also "extensive and ongoing experiential learning" (Atherton, 2007, p.413). In fact, the evolution of the person themselves in parallel to their project during the process of company creation is well known to advisors (Cuzin and Fayolle, 2004). In the words of Bates (2005, p.344), "setting up a firm is viewed as an active learning process, and the value of the knowledge thus obtained is the property of the entrepreneur, quite irrespective of whether the firm remains in operation". This knowledge may be used in the original entrepreneurial venture development, in a new project but may also contribute to "innovation and the renewal within existing organisations" (Rae, 2005b, p.573). In addition, it is also regarded as helping individuals in their personal life or the society at large (OECD, 1996; Gibb, 2002; EC, 2006).

One basis for considering nascent entrepreneurship as a learning experience comes from Kolb (1984, p.38) who defined 'experiential learning' as "the process whereby knowledge

is created through the transformation of experience". In his view, there are four major phases forming a continuous circle in this transformation: concrete experience, followed by reflective observation, abstract conceptualisation and active experimentation. More precisely, "immediate concrete experience is the basis for observation and reflection. These observations are assimilated into a theory from which new implications for action can be deduced. These implications or hypotheses then serve as guides in acting to create new experiences" (Kolb, 1976, p.21). In addition, he views individuals as exhibiting favourite learning styles depending on their preference as regards two primary dimensions: (1) concrete/abstract: concrete experiencing vs. abstract conceptualisation and (2) active/reflective: active experimentation vs. reflective observation.

A related approach (Allinson and Hayes, 1996) differentiates between intuitive and analytic cognitive styles. Hayes and Allinson (1998, p.850) define cognitive style as "a person's preferred way of gathering, processing, and evaluating information. It influences how people scan their environment for information, how they organize and interpret this information, and how they integrate their interpretations into the mental model and subjective theories that guide their actions". They also suggest that cognitive style could influence individual learning and the impact of training and counselling. In addition, Allinson et al. (2000) indicated that although entrepreneurs' cognitive styles seems to differ from the general population's and from middle and junior managers' by being more intuitive, it appears to resemble that of senior managers .

Among the various intentional models reviewed previously, one explicitly included individuals' thinking frames. Differentiating between rationality and intuition, Bird (1988, p.443) suggested that both "a person's rational, analytic, and cause and-effect-oriented processes" and their "intuitive, holistic, and contextual thinking" impact entrepreneurial intention and action. In recent years, some scholars have therefore turned to investigating the link between cognitive style and different entrepreneurial model elements (Brännback

et al., 2006; Barbosa et al., 2007; Kickul et al., 2009). While these links are outside the scope of this thesis they merit further attention and could represent an opportunity for future research that will be discussed in the concluding chapter.

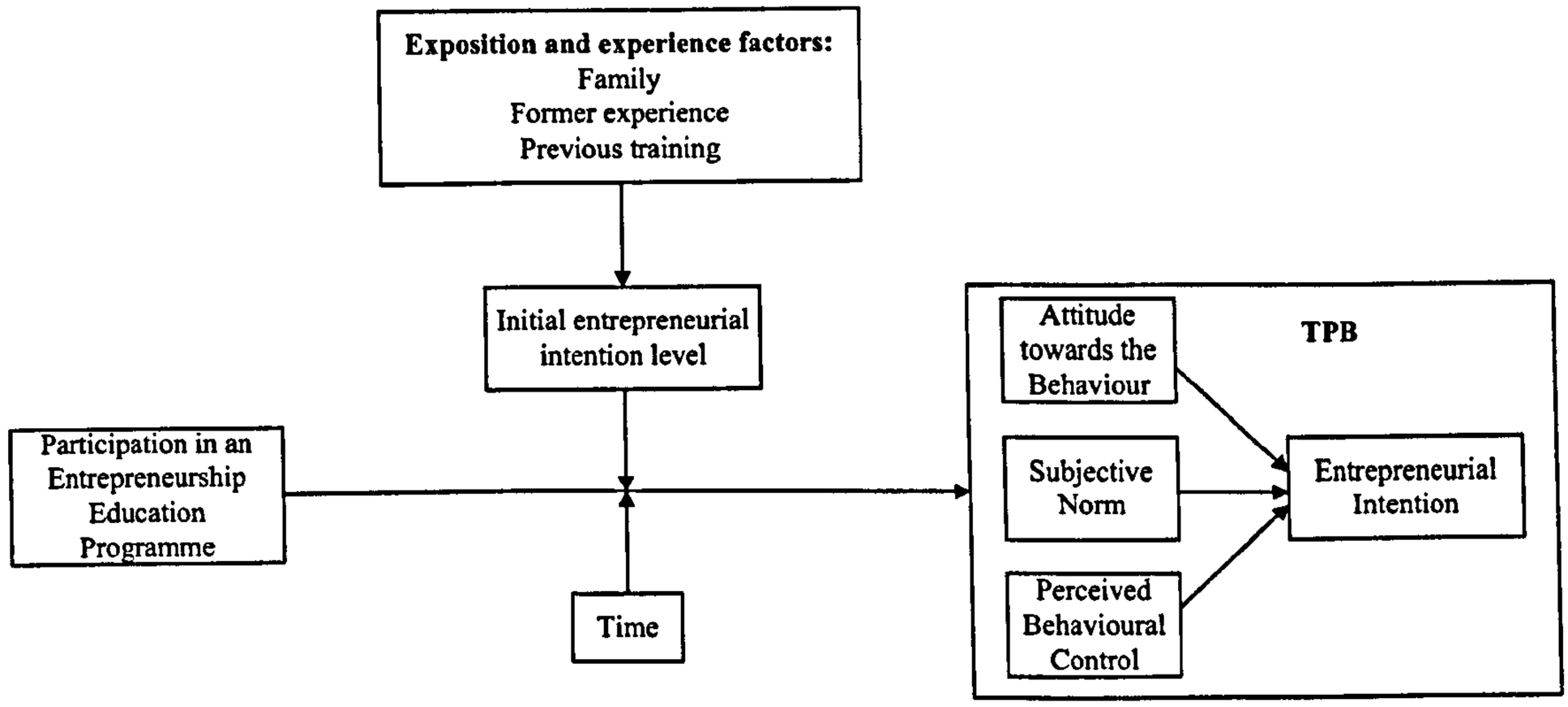
The above discussion highlights that experience can be viewed as a new knowledge generator (Kolb, 1984) and that enactive attainment has been identified as a one of the sources of self-efficacy (Bandura, 1977, 1986; Gist and Mitchell, 1992). In addition, in the theory of planned behaviour and other intentional approaches, past experiences and the lessons learned from them are also thought to influence various antecedents of a behaviour (Ajzen, 1991; Krueger, 1993; Krueger and Carsrud, 1993; Davidsson, 1995). Applying such a view to nascent entrepreneurship leads one to consider the process of new venture creation as a learning and transformation experience for the individuals involved in it.

In fact, based on this learning and attitudinal change view, it has recently been suggested that intention-based frameworks offer a good basis for the analysis of the impact of entrepreneurship education programmes (EEP) (Cox et al., 2002; Noel, 2002; Peterman and Kennedy, 2003; Fayolle et al., 2006; Souitaris et al., 2007). These authors suggest that an alternative use of intention-based models to the usual intention - behaviour prediction analysis is the measurement of the evolution of the different variables (antecedents of intention and intention) that can be attributed to the programme's impact. In other words, one way of analysing educational programmes' effects is to analyse their impact on the entrepreneurial perceptions of the participants.

Using a longitudinal study design, these scholars are concerned not only with the impact of each antecedent on intention but also, more importantly, with the evolution of the different models' elements before and after specific educational actions (Souitaris et al., 2007; Fayolle and Gailly, 2009). As a result, their method offers a way of assessing whether different programmes achieve the desired evolutions in beliefs, attitudes or entrepreneurial

intentions of their participants as shown in the model proposed by Fayolle and Gailly (figure 12).

Figure 12: Fayolle and Gailly's (2009) research model for evaluating an EEP
Source: Fayolle and Gailly (2009, p.184, original in French, my translation)



Souitaris et al. (2007) applied this approach to evaluate educational programmes offered to a sample of French and British students, while Fayolle and Gailly (2009) used a sample of students located in a region of France. They all focused on assessing the impact of education programmes. However, it can easily be seen how this approach could be transferred to individuals involved in nascent entrepreneurship ventures by replacing participation in an education programme with participation in a nascent venture project. This is the approach that was adopted in this thesis for investigating the impact of a start-up experience on individuals.

2.2.2.6 Findings from intentional approaches

Over the years a number of studies, undertaken in a variety of countries and contexts, have demonstrated the applicability of intentional frameworks to entrepreneurial behaviours. Research projects using these frameworks or parts of them and involving students have been undertaken in a series of individual countries (Kolvereid, 1996b; Krueger et al., 2000; Audet, 2002; Kennedy et al., 2003; Tounés, 2003; Zhao et al., 2005; Boissin et al., 2009b; Fayolle and Gailly, 2009; Devonish et al., 2010). Others have involved student samples

from more than one country (Autio et al., 2001; Baughn et al., 2006; Barbosa et al., 2007; Souitaris et al., 2007; Boissin et al., 2009a; Linan and Chen, 2009; Engle et al., 2010) and a few have involved surveying non-student samples (Davidsson, 1995; Chen et al., 1998; Emin, 2003; Kolvereid and Isaksen, 2006; Carr and Sequeira, 2007; McGee et al., 2009). This list is by no means exhaustive but it illustrates the established recognition of the appropriateness of intention-based frameworks for the study of entrepreneurial contexts.

The majority of the studies reviewed here were undertaken on student samples. While these differ from the nascent entrepreneur sample used in the present thesis, their findings concerning the application of intention frameworks to study entrepreneurial contexts may still serve as a basis for generating the hypotheses to be tested. In fact, while the questionnaires used for the present research had to be adapted for use with a working adult rather than student sample, the intention portion of the model used in the present research was similar to that of most of these studies and this is why their findings are reported here.

Before comparing intention-based studies, it should be noted that consensus regarding the operationalisation of the various constructs has not yet been reached (Armitage and Conner, 2001; Kickul et al., 2005). This issue will be discussed in more detail in the methodology section when justifying the choices made for this thesis but in the meantime, it warrants caution when comparing results from the various studies. For example, entrepreneurial intention is not always the actual dependent variable studied, as illustrated by Baughn et al. (2006) who focus on 'entrepreneurial interest' which they define as combining desirability and feasibility aspects. Others investigate the effect on intention of the different constructs such as entrepreneurial disposition which they relate to ESE (Pruett et al., 2009). That said, a selection of studies identified as using "classical" (similar to the ones presented in the above sub-sections) definitions for the constructs in their studies is presented in table 2. For each study, the type and size of sample used is provided as well as the effects detected of model elements on intention.

Table 2: A selection of intention-based entrepreneurship studies – Identified effects of intention antecedents.

		TPB Elements			SEE Elements	
Authors	**Sample**	**Attitude**	**Social Norm**	**PBC or ESE**	**Perceived Desirability**	**Perceived Feasibility**
(Audet, 2002)	150 Canadian students				+	+
(Autio et al., 2001)	97 UK students	+	n.s.	+ (PBC)		
(Boissin et al., 2009b)	655 French students	+	n.s.	+ (ESE)		
(Carr and Sequeira, 2007)	308 US adults	+	+	+ (ESE)		
(Chen et al., 1998)	140 US students			+ (ESE)		
(De Noble et al., 1999)	87 US students			+ (ESE)		
(Devonish et al., 2010)	376 Barbadian students				+	+
(Emin, 2004)	744 French public researchers	+	Indirect	+ (ESE)		
(Fayolle and Gailly, 2009)	158 French students	+	+	+ (PBC)		
(Kennedy et al., 2003)	1,034 Australian students		+		+	+
(Kolvereid, 1996b)	126 Norwegian students	+	+	+ (PBC)		
(Kolvereid and Isaksen, 2006)	297 Norwegian business founders	+	+	mixed (ESE)		
(Krueger et al., 2000)	97 US students (TPB) 97 US students (EE)	+	n.s.	+ (ESE)	 +	 +
(Linan et al., 2007)	300 students from Barcelona 249 students from Sevilla Combined Sample (549)	+ + +	Indirect Indirect +	+ (PBC) + (PBC) + (PBC)		
(Linan and Chen, 2009)	387 Spanish students 132 Taiwanese students Combined sample	+ + +	Indirect Indirect Indirect	+ (PBC) + (PBC) + (PBC)		
(Segal et al., 2005)	115 US students			+ (ESE)	+	
(Souitaris et al., 2007)	250 French and UK students	+	+	+ (PBC)		
(Tkachev and Kolvereid, 1999)	512 Russian students	+	+	+ (PBC)		
(Zhao et al., 2005)	265 US students			+ (ESE)		

Ajzen (1991) suggested that the contribution of the various antecedents to intention would differ depending on the situation. In addition, Hayton et al. (2002) showed that the motivational needs and self-reported reasons for starting businesses vary according to culture. This is illustrated by intention-based studies. For example, the relative weight of attitude and perceived behavioural control is found by Linan and Chen (2009) to differ between their Taiwanese and Spanish samples. For the Taiwanese sample the effect of perceived behavioural control appears to be stronger than that of attitude, whereas for the Spanish sample the opposite is true.

While attitude and perceived behavioural control / entrepreneurial self-efficacy seem to be significantly linked to intention in the majority of the studies identified in the literature, the social norm component effect appears more controversial. Some detect a positive effect for it (Kolvereid, 1996b; Tkachev and Kolvereid, 1999; Kennedy et al., 2003; Carr and Sequeira, 2007; Souitaris et al., 2007; Fayolle and Gailly, 2009; Engle et al., 2010), while others fail to detect such an effect (Krueger et al., 2000; Autio et al., 2001; Boissin et al., 2009b). Some assign an effect to it that is partially mediated by perceived desirability (Nasurdin et al., 2009) and others consider its effect as fully mediated by other elements of the model such as attitude, desirability and/or perceived behavioural control (Emin, 2003; Krueger and Kickul, 2006; Linan et al., 2007; Linan and Chen, 2009). Some authors choose to focus on specific elements of the model in greater detail. Concerning attitudes it has been shown that certain general attitudes, such as attitudes towards money or change, specific attitudes towards entrepreneurship and perception of the surrounding environment infrastructure for start-up, might influence start-up intentions (Schwarz et al., 2009). Yet not everyone agrees with these findings. For instance, Douglas and Shepherd (2002) found entrepreneurial intention not to be related to attitude towards income but only to attitudes towards risk and independence. This accords with Pruett et al. (2009) who identified intention as being related to independence but not to money- or status-driven motives. In a

different study, Cassar (2007) also found independence to be related to self-employment career choice. However, in that study Cassar additionally showed that independence aspirations appeared to have a negative link with subsequent firm growth, while financial success aspirations exhibited a positive link.

Very few studies report not finding a significant link between entrepreneurial self-efficacy and intent or entry into self-employment. In fact, in table 2 above only that of Kolvereid and Isaksen's (2006), based on Norwegian business founders, did not find such a link. These authors suggest that their failure to detect such a significant relationship may have been due to operationalisation considerations. Specifically they propose that the measures they used for entrepreneurial self-efficacy were too general and not specifically targeted towards self-employment behaviour and that this may have impeded their results.

The number of studies investigating transition from intention to actual start-up is extremely limited. Kolvereid and Isaksen's (2006) application of a full intention model was based on individuals identified via an official registrar, hence likely to have been captured at some advanced stage of the preparation. Other attempts were made to detect the link using student samples, but these were unsuccessful, possibly because of the delay necessary for students intentions to transform into entrepreneurial actions (Souitaris et al., 2007). These examples illustrate the lasting need to apply such models to nascent entrepreneurs identified early in their preparation, in order to test the intention-behaviour link effectively.

Some scholars rely on large standardised databases to study specific aspects of the transition to start-up phenomenon. For example, studies investigating the effect of general constructs related to entrepreneurial self-efficacy on actual start-up behaviour have recently been undertaken. Using country-level assessments of entrepreneurial confidence from the GEM data, Koellinger et al. (2007) show that countries with higher levels of such confidence are the ones exhibiting higher start-up activity. However, their findings also show that the same countries report lower survival rates for new businesses. Using the US

PSED, also discussed previously, Townsend et al. (2010) find a person's self-perceived entrepreneurial ability to be positively related to actual start-up. However, largely because they do adopt a large broad-brush approach, the results provided by such studies do not enable the investigation of the details underlying the general constructs they analyse (constituents of entrepreneurial self-efficacy for example).

Intention antecedents have also been used to propose typologies of entrepreneurs. Combinations of varying degrees of perceived feasibility and perceived desirability are regarded as enabling the distinction between different types of entrepreneurs. Fitzsimmons and Douglas (2010) propose that variations in perceived feasibility and perceived desirability can be used to differentiate between non-entrepreneurs, accidental, inevitable and natural entrepreneurs, as shown in figure 13. In their framework 'accidental entrepreneurs' represent people that Bhave (1994) and Gartner and Carter (2003) characterise as having identified an opportunity without having previously expressed an entrepreneurial desire. They are the ones being pulled to entrepreneurship by a positive triggering event (Shapero and Sokol, 1982). 'Inevitable entrepreneurs' on the other hand are those for whom the desire to become an entrepreneur is apparent before an idea is found (Bhave, 1994; Gartner and Carter, 2003). Though not all of them are in that situation, some may have been pushed into entrepreneurship by negative displacements, such as having been made redundant (Shapero and Sokol, 1982). In line with this, recent research suggests that among students, some perceiving entrepreneurship as neither especially desirable nor especially feasible feel they may at some point of their life be forced into entrepreneurship due to unemployment but will otherwise not consider it as a career option (Kennedy et al., 2003).

Figure 13: Fitzsimmons and Douglas' (2010) suggested typology of entrepreneurs
Source: Fitzsimmons and Douglas (2010, p.8)

Perceived Feasibility		Perceived Desirability: Low	Perceived Desirability: High
	High	**Accidental entrepreneur** (sufficiently high intention)	**Natural entrepreneur** (very high intention)
	Low	**Non-entrepreneur** (low intention)	**Inevitable entrepreneur** (sufficiently high intention)

Last but not least, the recent longitudinal use of intention models to investigate entrepreneurship education programmes has started generating results that warrant further investigation. Souitaris et al. (2007), using a sample of French and British students, found such programmes to produce positive impacts on both the subjective norm and the intention towards self-employment of students. However, these authors could not detect a significant impact for the programmes on either attitude towards self-employment or perceived behavioural control. Fayolle and Gailly (2009) on the other hand, using a sample of only French students, identified a positive impact of the programme on both attitude and perceived behavioural control six months down the road. In addition, while the change in intention was found to be non-significant for their overall sample, it appeared significant when the initial level of intention was taken into consideration. Specifically, they identified an increase in the intention level of students that started from a low level and a decrease for students who had started with high levels of intention. In fact, the results of these two studies converge in identifying a negative correlation between program impact and initial level of the investigated variables.

As discussed above, the contributions of intention-based approaches to the field of entrepreneurship have already been numerous and they continue to be developed. However, findings regarding the relative weight of each determinant of intention and actual

subsequent start-up appear to be far from generating consensus and thus still deserve further investigation (Brännback et al., 2006). While these intention-based approaches represent a well-documented way of analysing possible determinants of entrepreneurial behaviour, another important line of inquiry in this field consists in adapting the resource-based view initially developed for existing firms to the analysis of founding processes. In so doing, two specific knowledge resources - human capital and social capital - have attracted the attention of many entrepreneurship scholars. Attention will now be turned to the general theoretical background for such approaches in general and these two specific resources in particular.

2.2.3 Nascent entrepreneurship and knowledge resources

The integration of knowledge resources into the analysis of nascent entrepreneurship processes has involved importing concepts used to study existing firms and adapting these to the development of future firms. In the following sub-sections, the resource-based view of the firm is first introduced. Human capital and social capital resources are then presented. Finally, findings generated for nascent entrepreneurship by this line of research are discussed.

2.2.3.1 The resource-based view of the firm

The resource-based approach was initiated in the late nineteen-fifties by Penrose when she looked to study the growth of industrial firms. In the foreword to the third edition of her book 'The theory of the growth of the firm' she reviews the approach she used originally and the definition which provided the basis for the resource-based view of the firm (Penrose, 1959, p.xi):

> We start with the function of the firm and from this derive the appropriate definition of the firm. (...) The economic function of a firm was assumed simply to be that of acquiring and organizing human and other resources in order profitably to

> supply goods and services to the market. It was defined therefore as a collection of resources bound together in an administrative framework, the boundaries of which are determined by the 'area of administrative coordination' and 'authoritative communication'

Several aspects which she thereby developed appear particularly relevant in the context of entrepreneurship studies. She proposed that the importance of tangible assets and human resources for a firm depend on the way they are mobilised (1959, p.25) and defined the productive opportunity of a firm as comprising "all the productive possibilities that its entrepreneurs see and can take advantage of", based on the resources either owned by the firm or acquired from outside (1959, p.31). Within a firm, she differentiated between entrepreneurial services, the "introduction and acceptance on behalf of the firm of new ideas" and managerial services which "relate to the execution of entrepreneurial ideas and proposals and to the supervision of existing operations" (1959, pp.31-32).

Building on her proposal to analyse a firm based on its resources, Wernerfelt (1984) showed how this standpoint can throw light on the importance of a firm's resources in generating so-called 'resource-position barriers' and that a firm's strategy should therefore involve constant monitoring of the exploitation of its existing resources and the development of new ones. The focus of resource-based research therefore turned to identifying the specific characteristics of the resources of a firm which might generate a sustainable competitive advantage. Those which are difficult and costly for others to replicate were identified as the most valuable ones (Conner, 1991). In addition, it was made clear that a firm's resources comprise both tangible and intangible assets, among which the information and knowledge it is in command of (Barney et al., 2001).

When applying this approach to entrepreneurship, resources such as human capital (stock of knowledge), financial capital and social capital (access to outside resources and knowledge) can be analysed for the success of nascent entrepreneurs (Aldrich and

Martinez, 2001, p.45). It has been suggested that the type of resources needed might be related to the different rates of growth and innovation exhibited by firms (Greene and Brown, 1997). A resource-based approach was also used to investigate the impact of the US Small Business Development Centres' (SBDC) counselling program on new venture performance, by taking the perspective that such programs could lead to the development of knowledge resources susceptible of generating a competitive advantage (Chrisman and McMullan, 2000).

In the context of the current thesis the role of human capital and social capital as knowledge resources in the process of firm creation is identified as an important topic (Aldrich and Martinez, 2001; De Clercq and Arenius, 2006; Kim et al., 2006). These two concepts are defined below and possible sources of such types of capital are then identified

2.2.3.2 Human capital and social capital as resources

Human capital represents resources embedded in people (Becker, 1962). It comprises an individual's knowledge, skills, and abilities developed through education, training and experience (Liao and Welsch, 2005) and is considered important because it is thought to increase cognitive abilities and in turn raise potential productivity efficiency (Davidsson and Honig, 2003). When deciding whether to invest in their own human capital, individuals therefore weigh the expected benefits, such as increased wages, and the costs associated with the investment, such as time that could be used for another activity (Becker, 1993). When considering on-the-job training as a source of human capital, Becker (1962) differentiated between general and specific training, depending on whether the acquired skills could be useful to several firms (general) or just to the firm providing the training (specific). From a firm's standpoint, investing in specific training is seen as improving efficiency, but also as reducing employee turnover rates. From the worker's standpoint, the risk of getting laid off is reduced as the firm will resort last to getting rid of workers with such specific knowledge (Becker, 1993).

Social capital on the other hand has been defined as (Bourdieu, 1980, pp.2-3, original in French, my translation):

> All the actual and potential resources which are linked to the possession of a *lasting network* of more or less institutionalised *relationships* of inter-cognition and inter-recognition; or, in other words, to *the membership in a group*, as a set of agents [...] united by permanent and useful *links*. (emphasis in original)

In other words, it relates to the resources or goodwill that may become available to a person thanks to the help of their network (Nahapiet and Ghoshal, 1998; Adler and Kwon, 2002). It can thus in itself be considered a special type of resource for a person (Coleman, 1988). An individual's social relations are considered to be made up of both strong and weak ties depending on the mutual implication of the participants in the relationship (Granovetter, 1973). In general, including from a nascent entrepreneur's perspective, weak ties are valuable in that they serve as an efficient source of information and resources in areas with which one is less familiar. Strong ties, such as family or close friends, are likely to be in possession of similar information with lower added value to the individual in his search for resources complementing the ones he already has (Granovetter, 1973). Furthermore, differentiation has also been made between 'bonding' (focused on internal relations, or relations among actors within a community) and 'bridging' (focused on external relations, or relations an actor maintains with other actors) social capital (Adler and Kwon, 2002).

In the context of nascent entrepreneurship, the importance of social capital or of an efficient network thus stems from its impact on the provision of access to specific resources that would otherwise be either unavailable or accessible only with difficulty (Birley, 1985; Aldrich and Martinez, 2001; Davidsson and Honig, 2003). In particular, the specific skill of knowing how to leverage one's network's resources appears of primary importance in the context of entrepreneurship for which not all resources necessary to

handle a project may originally under the entrepreneur's control (Stevenson and Jarillo, 1990).

2.2.3.3 Sources of entrepreneurship-relevant human and social capital

Human capital refers to a person's individual knowledge (Becker, 1962). In the context of nascent entrepreneurship the origins of such capital include not only formal education but also specific training received on starting a company, previous work and managerial experience and previous start-up experience (Davidsson and Honig, 2003; Samuelsson, 2004; Shane and Delmar, 2004; De Clercq and Arenius, 2006; Kim et al., 2006; Liao and Gartner, 2006). Social capital on the other hand involves relying on one's network of relationships for the provision of relevant knowledge and resources (Nahapiet and Ghoshal, 1998). For nascent entrepreneurs these include both their personal relationships and the professional sources of such knowledge, such as specialised counsellors (APCE, 2005). These therefore warrant a more detailed description.

Developing a new organisation is fraught with difficulty. What Stinchcombe (1965) termed the 'liability of newness' illustrates some of the problems faced by new organisations: the need to learn and establish new roles, to rely on skills developed in a different context than that of the new organisation (or to invest in specific education) and the lack of established trusted relationships with the various stakeholders surrounding the organisation all appear relevant in the context of new venture creation. As a result, when developing their projects and/or starting their activities, entrepreneurs may turn to external sources for support and assistance. These include mentors, industry networks and professional forums, specialised counsellors and families or acquaintances (Chrisman, 1989; APCE, 2005; Bennett and Robson, 2005; Ozgen and Baron, 2007).

These sources of support can be classified depending on whether they act as informal or formal support (Birley, 1985). Among formal sources, Birley included bankers,

accountants, lawyers, local governments, Chambers of Commerce, realtors and the US Small Business Administration and among informal ones business and other contacts, family and personal friends. The adaptation of this list to the current French context of company creation produces the classification shown in table 3 below (Thiébaut et al., 2003).

Table 3: Types of external support

Source: Thiébaut et al. (2003, pp.18-19, original in French, my translation)

Informal support	Personal: Friends and Family
	Work acquaintances (former clients, colleagues)
Formal / professional support	Not dedicated to company creation: e.g. accountants, investment capital firms, professional from the specific area of the nascent venture, training structures, private counsellors on special topics, counsellors in innovation patenting
	Dedicated to company creation: e.g. Chambers of Commerce, Trade Chambers, spin-off structures, financing actors, private counselling networks, incubators, regional or local authorities services

In France, in addition to the general policies discussed in the first section of this chapter, national, regional and local programs have been initiated to foster entrepreneurship and the number of programs or structures aimed at supporting entrepreneurs has been expanding rapidly. In 1999 it was estimated that, without taking into account private counsellors (such as lawyers, accountants or consultants), there were over 3,000 structures supporting entrepreneurs (CNCE, 1999). Among these structures, the Chambers of Commerce and Industry and the Trade Chambers are thought to be playing a central role (Siegel, 2006).

Overall, approximately 10% of French new business founders report having been in contact with a specialised assistance centre during their preparation phase (Thiébaut et al., 2003; APCE, 2005). However, this number appears to underestimate the actual support during the preparation and practitioners estimate that it should be at least doubled (APCE, 2005).

The French term 'accompagnement', used to describe the guided preparation undertaken with professional support actors, embodies the notion of 'going with' the nascent entrepreneur and thus suggests a continuous relationship built over time between the entrepreneur and a counsellor independent of the project itself (Cuzin and Fayolle, 2004). Indeed, when studying professional support many authors have insisted on the collaborative nature of this support. It has been viewed as a 'co-production' (Rice, 2002) or 'servuction' - service and production - process (Leyronas and Sammut, 2000; Sammut, 2003), in which the nascent entrepreneur client has an active role to play. Moreover, this process of 'accompagnement' is viewed both as a multi-faceted learning process for the nascent entrepreneur and as a way for him to access relevant resources or develop competencies useful to the progress of his project (Cuzin and Fayolle, 2004).

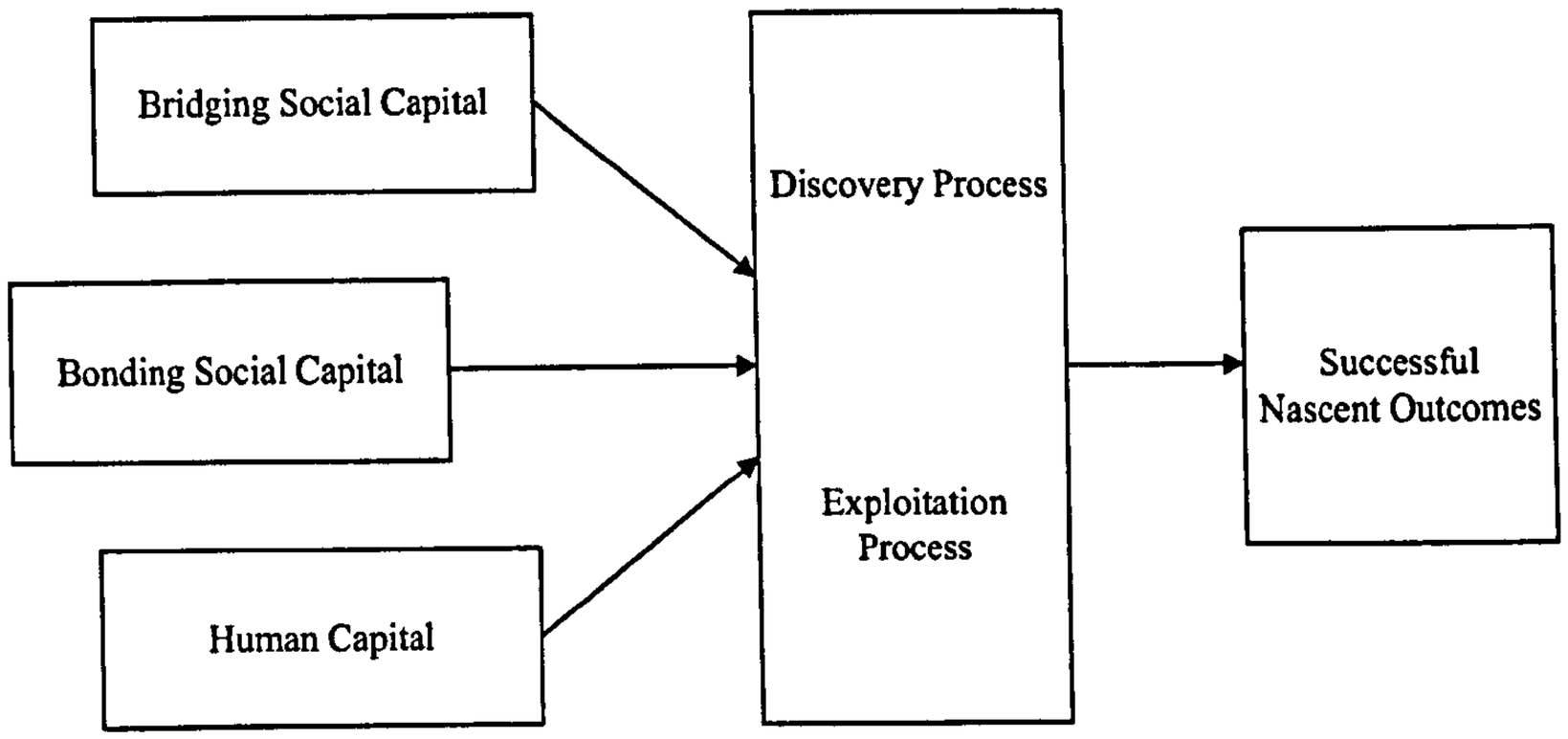
The aim of assistance should not be for the nascent entrepreneur to accumulate general knowledge, but rather to develop specific know-how relevant to the business idea (Sammut, 2003). In addition, the need for support and the difficulty in implementing support both increase with the degree of change induced at the individual entrepreneur level (change in professional situation) and at the venture level (innovativeness) (Cuzin and Fayolle, 2004). Moreover, required support also changes during the life of the project as both the nascent entrepreneur and his project evolve (Sammut, 2003; Cuzin and Fayolle, 2004).

2.2.3.4 Results from human and social capital approaches

Authors incorporating human capital and social capital in their analyses have usually been investigating both their effect on predicting entry into the nascent venturing process and their effect on the exploitation process implemented once an individual has entered the process. A framework (figure 14) combining human capital and social capital with entrepreneurship has recently been proposed by Davidsson and Honig (2003, p.308).

Figure 14: Davidsson and Honig's (2003) model of social capital, human capital and the nascent entrepreneur

Source: Davidsson and Honig (2003, p.308)



Using this framework these authors suggested that human capital appears to increase the probability of someone in the population entering into the nascent venturing process, while social capital appears to be associated both with the probability of entry into the nascent venturing process and with predicting successful exploitation (Davidsson and Honig, 2003).

When looking more closely at the items comprising such knowledge-related measures, it has been suggested that both having a higher education degree (up to a certain level) and knowing someone who started a business in the last two years appear to increase the likelihood of being a nascent entrepreneur (De Clercq and Arenius, 2006). However, formal education has elsewhere been found to have a positive effect only for the development of innovative ventures and a negative effect for the development of reproducing ventures (Samuelsson, 2004). In addition, Friga (2008) failed to find any connection between education or taking entrepreneurial-related classes and the likelihood of new venture creation.

Previous start-up experience has been suggested as a positive human capital component for both entry into the nascent venturing stage and development of the nascent venture (Davidsson and Honig, 2003). Again, when controlling for the type of venture and differentiating between innovative and reproducing ventures, results appear to be mixed.

While a positive effect was found for previous start-up experience on the progress in innovative ventures development, it was not the case for reproducing ventures (Samuelsson, 2004). Moreover, recent findings actually seem to indicate a possible negative impact of previous start-up experience on the likelihood of establishing a new firm (Kim et al., 2006), especially for entrepreneurs in highly dynamic markets (Newbert, 2005).

Following a meta-analysis of studies investigating the impact of human capital investments on firm performance, Unger et al. (2009) suggest that more than education and experience themselves, it is the outcomes of these experiences in the form of knowledge and skills that matters for firm performance. In addition, rather than possessing expertise in one area, Lazear (2005) suggested that being a competent generalist is what increases the likelihood of being a successful entrepreneur. This author suggested that entrepreneurs must be what he calls "jacks-of-all-trades" and that they "need not excel in any one skill but are competent in many" (Lazear, 2005, p.649).

At the individual level, social capital can come from a person's original family environment and from one's developed relationships outside this initial circle (Greene and Brown, 1997; Aldrich and Martinez, 2001). It has thus been investigated whether an individual's background might have an impact on the likelihood of their becoming an entrepreneur. In fact having entrepreneurial parents was found to increase a person's preference for an entrepreneurial career (Scherer et al., 1989) and actual entry into self-employment (De Wit and Van Winden, 1989). In addition, it has been shown in the UK that though being from an entrepreneurial family increases the likelihood of becoming an entrepreneur, this realisation does not necessarily take place in the same field as the parents' venture (Gray, 1998).

However, recent investigations into whether having entrepreneurial parents increases one's likelihood of being a nascent entrepreneur have produced contradictory results. Based on Swedish data, it has been suggested that there is indeed a difference between nascent

entrepreneurs and the general population (Delmar and Davidsson, 2000; Davidsson and Honig, 2003). But, a recent study failed to detect any impact for the presence of entrepreneurial parents in differentiating nascent entrepreneurs from the general population, though it found human capital to be associated with nascent entrepreneurship activity (Kim et al., 2006). The authors offer several possible explanations for this contradictory finding including for example that entrepreneurial parents may wish for their children less difficult career opportunities or that the positive effect of having entrepreneurial parents may only become apparent once the company is started .

When looking at progress through the nascent venture creation process, rather than just entry into nascent entrepreneurship, emotional support provided by friends and families also seems to produce mixed results. Birley (1985) suggested that during their preparation, nascent entrepreneurs rely on their informal network not only for professional matters, but also for moral support. More recently however, while Davidsson and Honig (2003) reported that such personal support was positively associated with the number of gestation activities undertaken, Samuelsson (2004) found no effect on fostering progress through the process.

In the US, Small Business development Centres (SBDC) are among the support structures dedicated to entrepreneurs. Guided preparation provided by these centres, "the research, planning, and other activities that an entrepreneur engages in prior to start-up, with the assistance of an outside advisor" (Chrisman et al., 2005, p.770), was found to influence both survival and subsequent performance as measured by absolute growth in sales and employment (Chrisman and McMullan, 2000; Chrisman et al., 2005). Similarly, results for French firms created in 1998 and followed up by INSEE indicate that having followed a specific training program during the formation process appears to increase the five-year success rate, while having been in contact with one or more counsellors seems to help newly founded companies get through the first two years of existence (INSEE, 2006). In

addition, having been in contact with a professional dedicated to company creation appears to increase the subsequent profitability and job creation of a company (Thiébaut and de Shab, 2006). Furthermore, in his study investigating the impact of various types of knowledge on likelihood of start-up, the only element which Friga (2008) found related to actual start-up was the level of use of formal assistance programs.

However, a recent Swedish study also focusing specifically on the immediate outcome of the nascent venturing process (whether a viable new firm gets started or not) has cast doubt over the value of having been in contact with an assistance agency during the process (Davidsson and Honig, 2003). These authors found being a member of a business network to have an important impact on gestation activity, as well as on having a first sale or being profitable (indicated by the owners), but little effect for having been in contact with a designated assistance agency on the creation of a viable entity. They interpreted these results as a possible indication that these assistance agencies may not be directing nascent entrepreneurs towards the gestation behaviours actually leading to start-up (Davidsson and Honig, 2003, p. 323).

It has elsewhere been suggested that for people with limited experience, support agencies could provide beneficial information and guidance (Van Gelderen et al., 2005). However, the identification of the most promising target as those with limited experience is somewhat contradicted by other findings. For example, Friga (2008) found the use of formal programs and taking entrepreneurial classes to produce higher effects for people with more experience and a higher level of education.

In fact, while the majority of these results hint at the value of having received professional support during start-up preparation and launch, it has to be asked whether they might be due to inherent selection biases such as self-selection or committee selection processes (Storey, 2003). For example, it has sometimes been questioned whether entrepreneurs using professional support and assistance programmes are really those who 'need it most'

(Sammut, 1998). In addition, for small SMEs research, the difficulty involved with isolating the specific influence of training on the small firm's performance has been put forward (Storey, 2004).

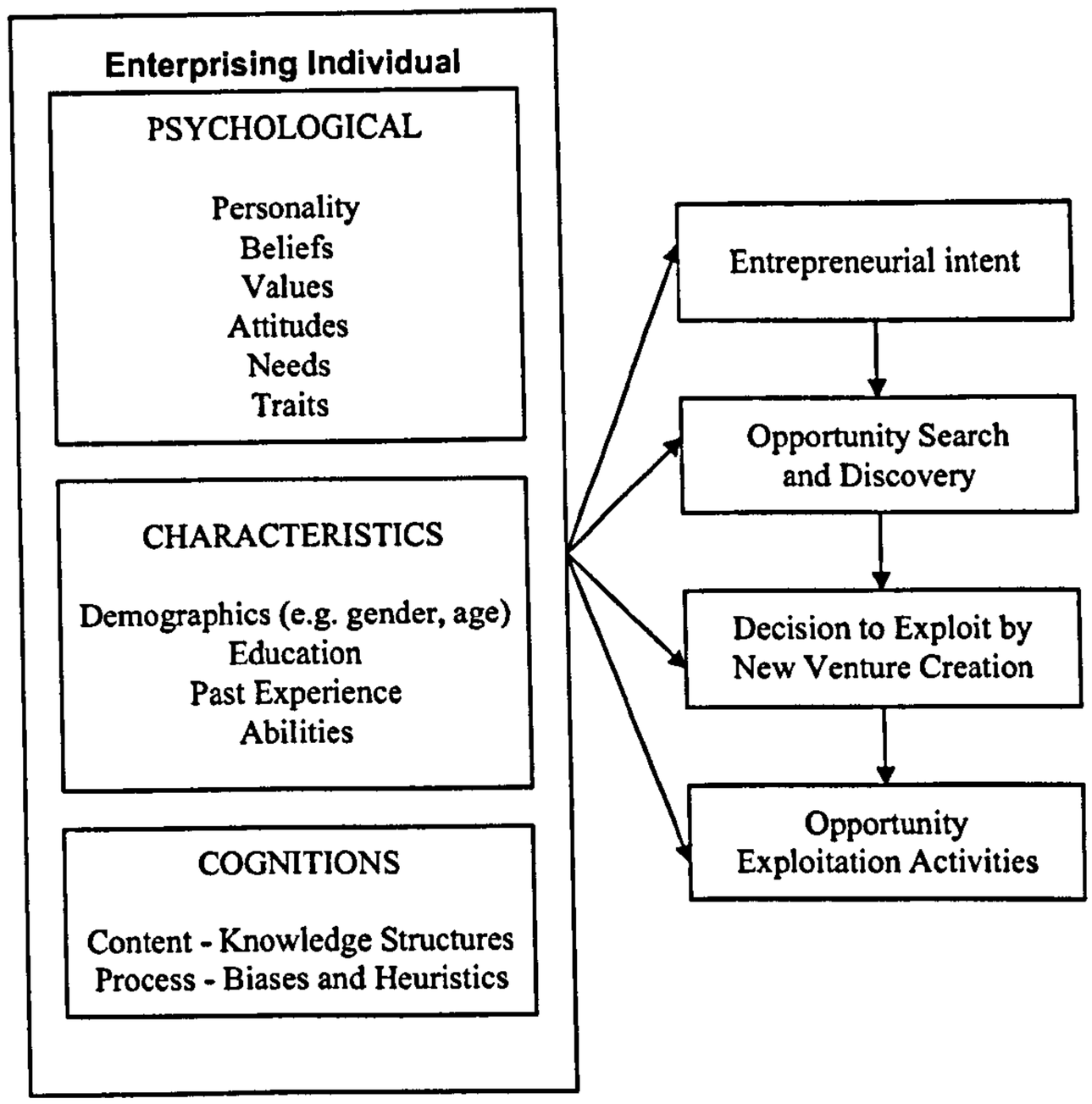
2.2.4 Combining the various approaches to generate new findings

The discussions in the preceding sub-sections illustrate the overlap in some of the constructs used by scholars relying on different theoretical approaches. Some characteristics of the entrepreneurs may indeed both be looked at through human and social capital lenses and considered as possibly influencing the antecedents of intention or self-efficacy described previously. For example, experience in a behaviour which has been identified as one such influencing element (Bandura, 1986; Ajzen, 1991) is, in the context of entrepreneurship, often included in the human capital of an individual (Davidsson and Honig, 2003; Rotefoss and Kolvereid, 2005; Kim et al., 2006).

In addition, while trait and demographic characteristics were criticised for not by themselves providing much explanatory power for entrepreneurial undertakings (Brockhaus, 1982; Gartner, 1988; Boyd and Vozikis, 1994), their influence was not completely ruled out. In fact, they are thought to possibly influence ultimate behaviours by impacting the antecedents identified in intention-based models (Bandura, 1977, 1986; Ajzen, 1991). For example, when considering career choices among Norwegian students, Kolvereid (1996b) showed that demographic characteristics could have effects on attitude, subjective norm and perceived behavioural control of these students, which in turn influenced their career intentions. As a result, when applying intention-based approaches, scholars also look to control for demographic aspects that could potentially exert indirect influences on various elements of the models (Bird, 1988; Ajzen, 1991; Boyd and Vozikis, 1994; Davidsson, 1995).

The model recently proposed by Shook et al. (2003) illustrates this recent evolution (figure 15).

Figure 15: Shook et al's. (2003) organising model
Source: Shook et al. (2003, p.381)

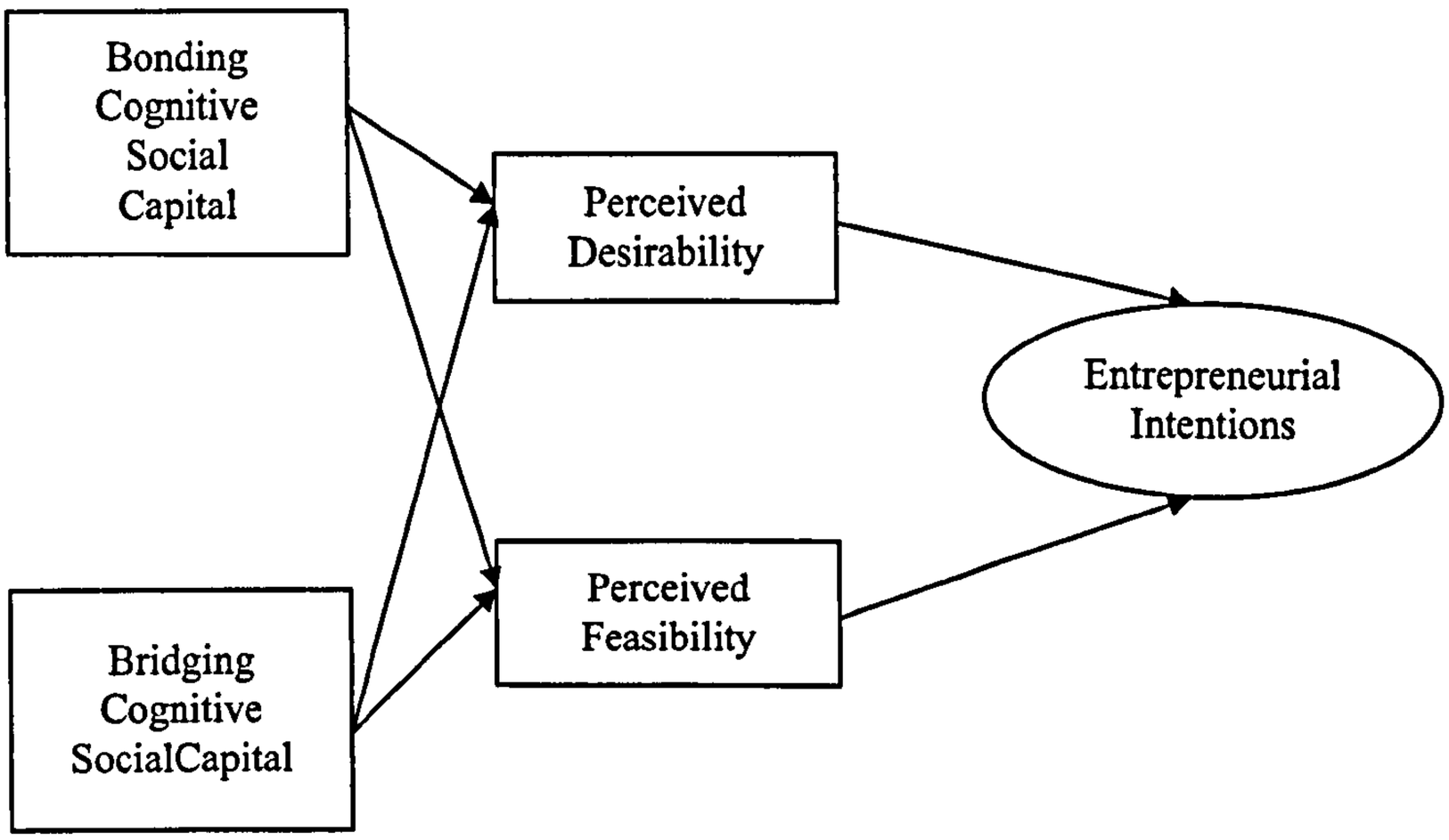


As was previously discussed, actual creation processes are unlikely to be as linear as depicted by their model. However, this model puts the individual and his specificities at its centre and integrates traits and demographic elements together with intention ones.

From a resource-based standpoint, while the fact of having been raised by entrepreneurial parents is a stable resource, work and entrepreneurial experience evolve with a person's career. In addition, networks on which the person relies are also known not to be static (Greve and Salaff, 2003). The presence of an entrepreneurial environment (relatives, friends, colleagues) is considered a source of vicarious experience when looked at from intentional or self-efficacy standpoints (Shapero and Sokol, 1982; Bandura, 1986) and a source of social capital when considered from a resource standpoint (Davidsson and Honig,

2003; Liao and Welsch, 2005; Kim et al., 2006). As a result, Linan and Santos (2007) suggested combining them in a common framework (figure 16).

Figure 16: Linan and Santos' (2007) entrepreneurial intention model with cognitive social capital
Source: Linan and Santos (2007, p.448)



Similarly, Hindle et al. (2009) have recently proposed that not only social capital but also gender and human capital variables should be included in intention-based investigations so as to provide a better definition of the models used for such investigations.

Recent trait-based research, after correcting for the methodological shortcomings of earlier studies and sometimes integrating traits within intention-based investigations has brought new findings to the field. Tolerance for risk has, for example, been linked to intention (Douglas and Shepherd, 2002; Segal et al., 2005) and to the efforts placed on building and starting new ventures (De Carolis et al., 2009). It has elsewhere been shown that the influence of risk propensity on intention is mediated by entrepreneurial self-efficacy (Zhao et al., 2005). Cognitive style variations between individuals (either analytic or intuitive) have been shown to warrant different models of entrepreneurial intentions (Krueger and Kickul, 2006), to impact the level of some dimensions of entrepreneurial self-efficacy (Barbosa et al., 2007) and to influence the link between various facets of entrepreneurial self-efficacy and intentions (Kickul et al., 2009). In addition, social networks and relational

capital were seen to influence illusion of control and risk propensity, which in turn influenced the progression of new ventures (De Carolis et al., 2009). These authors however warned that this finding may suggest that networks may also be a source of cognitive biases enticing some individuals to launch new ventures with limited (if any) market potential.

Viewing demographic elements through self-efficacy or intentional lenses leads to considering the greater presence of entrepreneurial familial environments among entrepreneurs than among the general population (Gray, 1998) as one possible illustration of the vicarious sources of self-efficacy, perceived behavioural control or feasibility (Mauer et al., 2009). In general, role models are known to be able to influence career development of young adults (Van Auken et al., 2006). Regarding exposure to enterprising individuals, it has been shown in some cases to influence intention either indirectly through its antecedents (Krueger, 1993; Devonish et al., 2010), or in other cases to exert a direct influence (Kickul et al., 2008; Pruett et al., 2009) or in others still to have both direct and indirect effects on intention (Carr and Sequeira, 2007). Using a large longitudinal British database, Henley (2007) suggested that impacts for the presence of entrepreneurial parents differ between aspiration (no impact) and transition (positive impact) into entrepreneurship. He also found higher levels of education to be negatively associated with self-employment aspirations, though his results also hint (but with no statistically significant relationship) to the fact that higher education could make actual transition into self-employment easier.

It has elsewhere been proposed that adopting a gendered-approach to entrepreneurship research could bring new developments to the field (Bird and Brush, 2002). In fact, gender is another demographic aspect that has received a lot of attention, given the pronounced gender gap in entrepreneurial activity present in an overwhelming majority of countries (Allen et al., 2008). In their international study, Allen et al. reported that women showed lower levels of optimism and self-confidence with respect to starting a business than did

males. Gender has been found to have a direct influence on intention (Zhao et al., 2005; Schwarz et al., 2009). It has elsewhere also been found to influence self-efficacy and the link between self-efficacy and intention. Specifically, Kickul et al. (2008) suggested that among their student sample, work experience led to higher levels of entrepreneurial self-efficacy for boys than for girls. In addition, they found the link between self-efficacy and interest in entrepreneurship to be stronger for boys than for girls. In that same study they also found role model effects to be stronger for girls than for boys (Kickul et al., 2008). However, detailed investigations taking into account the ethnicity of the respondents also suggest that gender effects may not be uniform across different minority groups (Kwong et al., 2009).

Finally, exposure to entrepreneurship prior to an entrepreneurship training programme, either in the form of vicarious or own experience, is also thought to have an influence on the impact that the programme may have on the individual involved in it. For example, Peterman and Kennedy (2003) reported that the increase in desirability and feasibility was larger for the participants in their program who had indicated the least positive prior experience. However, these authors did not identify any impact for the breadth of prior entrepreneurial exposure on the program's effect. From a different standpoint, Fayolle and Gailly (2009) suggested that the programme they studied had a more positive immediate impact (specifically on attitude and subjective norm) on students coming from non-entrepreneurial families.

The above discussion has illustrated the fact that intention-based, learning-based and resource-based approaches all represent promising routes to investigate nascent entrepreneurship. In addition, it was shown that the various findings from existing publications relying on these approaches still produce insufficient or contradictory results that require further investigation. The importance of including background variables such as gender or entrepreneurial parents for example in nascent entrepreneurship research was

reaffirmed and the interest of combining elements from these various approaches was also demonstrated. These remarks were all taken into consideration in designing the research questions and models that are presented in the next section.

2.3 Research problem and questions

Before to turning to the actual research questions, it should be noted that the definition of entrepreneurial behaviour in the context of this thesis is: "the creation of independent activity". Hence, "start-up behaviour" or "started outcomes" are here understood as encompassing both sole proprietorships and incorporated businesses. On the other hand, "withdrawn outcomes" comprise people who decided to put a halt to their nascent venture projects either temporarily or indefinitely.

Among the different observations drawn from the literature review, two stand out as the most important in the context of this thesis: (1) there is a patent lack of understanding of the strength of the supposed link between intention and start-up behaviour and (2) variables in intention models evolve with the entrepreneurs' experiences. Therefore longitudinal research based on these models offers promising research avenues. In this context, the main research problem for the study is stated as:

What are the determinants of the outcomes of nascent venturing processes in terms of

(1) started vs. withdrawn projects and

(2) changes in individuals' perceptions towards entrepreneurship?

As the main research problem involves two levels of analysis, two research questions which will guide the actual analysis are proposed:

Research Question 1 at the project level: **What factors determine whether a nascent project gets realised?**

Research Question 2 at the individual level: **How does a nascent venture experience affect the individuals involved in it?**

Three separate data analysis chapters are included in this thesis to account for the need for operationalising the constructs related to these research questions (chapter 4) and then conducting the analysis at the two different levels proposed: chapter 5 focusing on the nascent venture level and chapter 6 on the nascent entrepreneur level. Both analyses rely on intention-based frameworks. However, these frameworks are used in two different manners. For the nascent venture level, a "classic" intention-type model with a "determinants – intention – behaviour" sequence serves as the basis for the analysis. For the nascent entrepreneur level, an adaptation involving measuring the evolution of the determinants of intention between two points in time is used. These models are presented in detail in the next chapter.

2.4 Summary of chapter 2

In this chapter the thesis was situated within the general field of entrepreneurship research. Specifically, the nascent venturing stage or emergence phase was identified as representing the portion of the process that is proposed for study. A description of this phase was provided by illustrating the magnitude of this phenomenon and investigating its components. Furthermore, intention-based, learning, resource-based and human and social capital perspectives were identified as providing initial theoretical grounding for the study. Based on these approaches, several points were identified as warranting more research. In particular, the analysis of the entrepreneurial intention-behaviour link using working adult samples identified early in the preparation phase, the evolution generated at the level of the individual by their involvement in nascent venture projects and the combination of different theoretical contributions in a common framework to analyse these issues were identified as left open for investigation in current entrepreneurship research. Finally,

having shown the need for further investigation in the field of nascent entrepreneurship, a general research problem guiding this research was presented. As this research problem involves two levels of analysis it was separated in two related research question to be answered separately. Each of these research questions will be the focus of a dedicated data analysis chapter.

Before turning to these data analyses, background information must be provided regarding the methodology employed in this research. This is done in the next chapter, starting with the epistemological positioning of this study and then presenting the methodological development that resulted from this stance.

3. Epistemology and methodology

This chapter constitutes the transition between the literature review and the subsequent data analysis and discussion chapters. It aims to present the methodological choices that were made in order to answer the two research questions proposed: (RQ1) "What factors determine whether a nascent project gets realised?" and (RQ2) "How does a nascent venture experience affect the individuals involved in it?"

After a brief review of possible epistemological choices, the positioning selected for this research, *interpretivism*, is first presented. That stance implies that the results of the thesis will be viewed as context-related and incorporating some degree of subjectivity. In addition, the nascent entrepreneurs involved in the study are considered to be acting on a combination of general external factors and some personal influences specific to each of them. Following this, the models that guided the analysis are described. The discussion then turns to the description of the data collection method selected (questionnaire-based survey, data collected at two points in time separated by a one-year interval) and how the nascent entrepreneurs who participated in this study were identified (a partnership with a major French support organisation). Next, the way the questionnaire items used to measure the various constructs of these models were selected is presented. Finally, a brief description of the characteristics of the initial sample is provided.

3.1 Epistemological positioning

Epistemology represents "the study or a theory of the nature and grounds of knowledge especially with reference to its limits and validity" (Merriam-Webster, 2010). Given the variety of research streams present in entrepreneurship, clear and explicit epistemological positioning of research projects in the field is very important (Lindgren and Packendorff,

2009). In order to clarify such positioning, Séville and Perret (2007, p.14) consider three main questions:

- *What is the nature of the knowledge generated?* Does the researcher consider it objective knowledge that exists independently of him, to represent his interpretation or to be a construction of reality?

- *How is scientific knowledge generated?* Is it by way of explanation, understanding or construction?

- *What are the value and status of this knowledge?* Is this knowledge scientific or not and by which the criteria will it be judged?

In addition, different logical processes may be used to produce knowledge: *induction* uses observations to generate theories, *deduction* uses theories to generate hypotheses then tested with data collected for that purpose and *abduction* alternates between these two as a form of inferred knowledge (David, 1999; Charreire and Durieux, 2001).

One meaning, attributed by Kuhn (1962, p.175), to *paradigms* is "the entire constellation of beliefs, values, techniques, and so on shared by the members of a given community". In order to position the current thesis with regards to the four above-mentioned points, a general review of competing epistemological paradigms is first provided in the next sub-section. The positions adopted by some entrepreneurship researchers regarding these paradigms are then presented. Finally, the interpretivist approach adopted in the current thesis is described and justified.

3.1.1 Competing epistemological paradigms

The first thing to consider in order to specify the epistemological position of the study is the nature of the knowledge generated which refers to the status given to the data collected (Mbengue and Vandangeon-Derumez, 1999). From that angle, three main paradigms can

be found in organisational science: positivism, interpretivism and constructivism (Séville and Perret, 2007; Evrard et al., 2009).

3.1.1.1 Nature of knowledge generated

Until the nineteen-fifties social sciences were in the main guided by positivism. In France, this approach was grounded in the work of French sociologist Auguste Comte and his view concerning the existence of an objective reality (Royer and Zarlowski, 2007).

For positivists, reality is "objective, tangible and fragmentable" (Mentzer and Kahn, 1995). Several streams related to positivism emerged in the 20th century which all share a series of guiding principles. Le Moigne (1990) identifies five such principles:

- The *'ontological principle'* which stipulates the existence of an objective essence for knowledge independently from the subject observing or testing it and of a 'truth criteria' that may be used to assess whether a proposition properly describes reality (Le Moigne, 1990; Mbengue and Vandangeon-Derumez, 1999). This principle implies that the goal of science is that of ultimately discovering that 'true' reality (Chalmers, 1982; Le Moigne, 1990).

- The principle of the *'cabled universe'* according to which context-free simple causal relationships or universal laws that govern the world can be identified (Le Moigne, 1990; Séville and Perret, 2007). This implies a strong deterministic view of the world, where individuals respond mechanically to existing conditions based on immutable pre-determined causal relationships (Mbengue and Vandangeon-Derumez, 1999). It also suggests that research objects can be decomposed in fragments (reductionism) which when taken together provide an exhaustive view of reality (Le Moigne, 1990; Mentzer and Kahn, 1995).

- The principle of *'objectivity'*: the objective nature of knowledge from this point of view refers to its independence from the beliefs or degree of pre-existing knowledge of the

individuals (Chalmers, 1982). In the words of Popper (1959, p.22, emphasis in original) "scientific knowledge should be *justifiable*, independently of anybody's whim" and "the *objectivity* of scientific statements lies in the fact that they can be *inter-subjectively tested*".

- The principle of the *'naturality of logic'*: in the same way as they see universal laws as governing the world, positivists pre-suppose the existence of a natural way of reasoning, the natural or formal logic (Le Moigne, 1990).

- The principle of *'lesser action'* which, though not unique to positivism, favours simplicity (Le Moigne, 1990).

Constructivists on the other hand insist on the fact that reality is subjective and influenced by the interaction between the researcher and the object under study (Mbengue and Vandangeon-Derumez, 1999; Johnson and Onwuegbuzie, 2004). Similarly to his propositions for principles guiding positivism, Le Moigne (1990) offered five principles related to constructivism:

- The principle of *'representability'* of the experience of reality according to which knowledge is concerned with providing an adequate representation of the world as perceived through our experiences (Le Moigne, 1990).

- The principle of the *'constructed universe'* which highlights the importance of the finality of the knowledge project pursued by the researcher (teleology principle) in the same way as any human activity can be seen as guided by a predetermined goal (Séville and Perret, 2007). Constructivists thus take an intentionalist stance where people freely take advantage of the multiple possibilities offered to them (Le Moigne, 1990; Mbengue and Vandangeon-Derumez, 1999; Séville and Perret, 2007).

- The principle of *'projectivity'* or interaction between the subject and the object which rejects the dualism inherent in the objectivity criteria of the positivists (Le Moigne, 1990).

- The principle of *'general argumentation'* or the *'new rhetoric'* which proposes that the ways of producing convincing reasoning are not limited to natural logic. As long as the

axioms on which these alternate forms of reasoning are based are clearly stated, Le Moigne (1990) sees no reason why these should not be promoted.

- The principle of *'intelligent action'* as "the invention or elaboration, by any form of reasoning (describable a posteriori), of an action (or more correctly of a strategy of action) proposing an "adequate" or "appropriate" correspondence between a perceived situation and a project conceived by the system whose behaviour one is interested in" (Le Moigne, 1990, p.113, original in French, my translation).

Interpretivists share with constructivists the view that no universal reality exists, but rather that reality is subjective. They differ in that they believe in the possibility of multiple realities that can be interpreted, while constructivists believe that reality either cannot be attained (moderate) or does not exist (radical) (Séville and Perret, 2007). As opposed to the ontological hypothesis which guides positivists, the phenomenological hypothesis is viewed as guiding interpretivists and constructivists (Allard-Poesi and Maréchal, 2007). It refers to the fact that reality is a "construct resulting from the interaction of social actors" (Mbengue and Vandangeon-Derumez, 1999, p.3). For interpretivists, not one reality exists, but rather a series of 'mutually socially constructed realities' and the individuals involved in these realities are seen as 'proactive and voluntaristic' (Mentzer and Kahn, 1995, p.232).

3.1.1.2 Way scientific knowledge is generated

In terms of the way knowledge is generated, each epistemological stance has its own approach. For positivists, who posit the existence of an external truth, reality has to be 'discovered' (Séville and Perret, 2007) or 'found' (Wicks and Freeman, 1998). In this context, the objective of research is uncover the cabling of causal relationships supposed to determine the way the worlds operates (Le Moigne, 1990).

For interpretivists, the goal is rather one of 'understanding' the world and its multiple realities as reflected by the interpretation that different actors make of it (Mentzer and

Kahn, 1995). In this approach, understanding is present at two levels: that of individuals with regard to the world surrounding them and that of the researchers with regard to interpretations of the world provided by these individuals (Séville and Perret, 2007). This understanding must be contextualised and cannot be seen as universal though it may in some cases be extended to contexts similar to the one in which they were originally produced (Mbengue and Vandangeon-Derumez, 1999).

Finally, for constructivists the 'construction' of reality is what guides the research and the finality of the research project itself, as expressed by the teleological principle, is an important element in this construction (Séville and Perret, 2007).

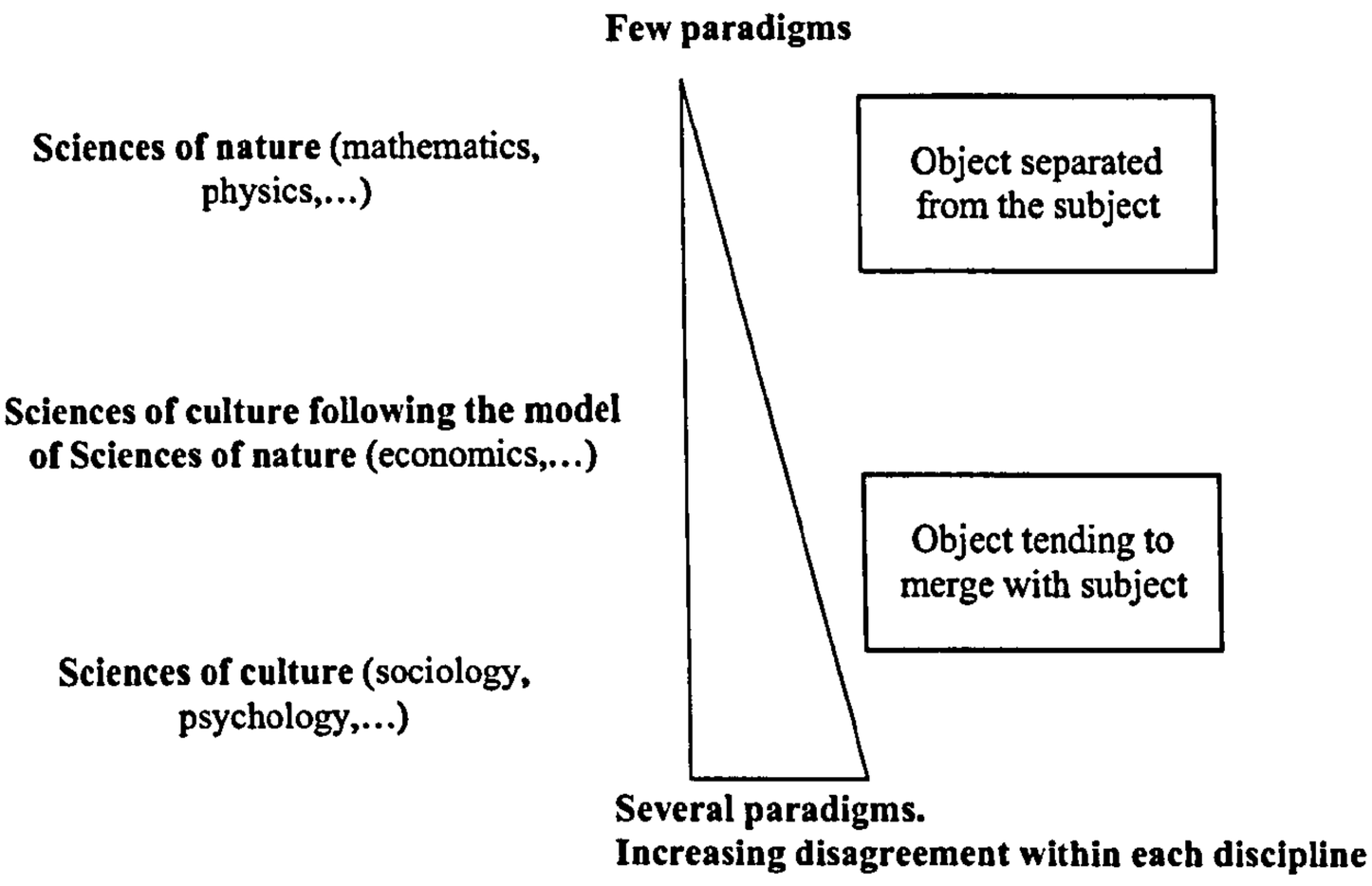
3.1.1.3 Value and status of the knowledge generated

According to Kuhn (1962) research areas that reach a "science" status share the fact that their researchers have gathered around what he calls a 'unifying paradigm'. This paradigm represents a series of shared beliefs, recognised values and techniques or the 'disciplinary matrix' of the group and includes a series of 'exemplars' or past accomplishments in the form of 'concrete puzzle-solutions' that can serve as examples for future research (Kuhn, 1962).

The epistemological posture adopted influences the researcher's view of what constitutes science and how the scientific nature of knowledge ought to be judged. According to Laufer (1997, quoted by Emin, 2003) sciences can be classified in three major groups which differ in terms of the number of competing paradigms they include and the pre-supposed relationship between the researcher and the object under study (figure 17).

Figure 17: Positioning of different sciences

Source: Laufer (working documents distributed at the 1997 CEFAG workshop on epistemology) as quoted by Emin (2003, p. 33). Original in French, my translation.



The choice of the 'criterion of demarcation' (Popper, 1959) to be used to differentiate between scientific and non-scientific disciplines remains open to debate. Positivists suggest that any discipline applying for a classification as scientific should be judged with regard to some universal validity criterion, while for constructivists such universal criterion need not exist and each knowledge area should be assessed based on ethical validity fostering discussion (Wicks and Freeman, 1998). Kuhn (1962) believed that in the same way as language, scientific knowledge belongs in and should be judged by groups sharing common interests. This, despite his refusal to admit it, led some to classify him as relativist (Chalmers, 1982).

Each epistemological paradigm is associated with a series of validity criteria. For positivists, three main criteria can be identified: verifiability, confirmability and falsifiability (Séville and Perret, 2007). Verifiability linked to the logical positivism of the early 20th century requires that theories be verified by empirical observations, hence that truth be linked to experience (Chalmers, 1982). The problem with this position is that, unless all possible cases are available for consideration, no guarantee exists that the theory can ever be fully verified (Popper, 1959; Chalmers, 1982). As a result, probabilistic logic

was mobilised to develop the confirmability approach. From that point of view, rather than being called 'true' a proposition can at best be qualified as 'probable', though the problem then becomes that of quantifying the associated probability (Chalmers, 1982; Séville and Perret, 2007). The fact that a theory could never be verified is what led Popper (1959) to propose falsifiability as the demarcation criterion that should be used to distinguish between scientific and non-scientific domains and to test the validity of existing propositions. Popper (1959) insists on the asymmetry between verification and falsification. While a theory can never be fully verified, it may get refuted if it does not stand the falsification test (Popper, 1959; Chalmers, 1982). In Popper's (1959) view, this testing process should result in the retention of only the 'fittest' theories, though these are never considered definite, but only corroborated until further tests.

For interpretivists, validity may be judged according to the idiographic and empathy criteria (Séville and Perret, 2007). According to Séville and Perret, the former refers to the fact that the knowledge generated should reflect the specific context from which the understanding of the phenomenon was derived, as opposed to the nomothetic view advocated by positivists. The latter refers to the fact that in order to understand the way other individuals interpret reality, the researcher must be able to develop this empathy.

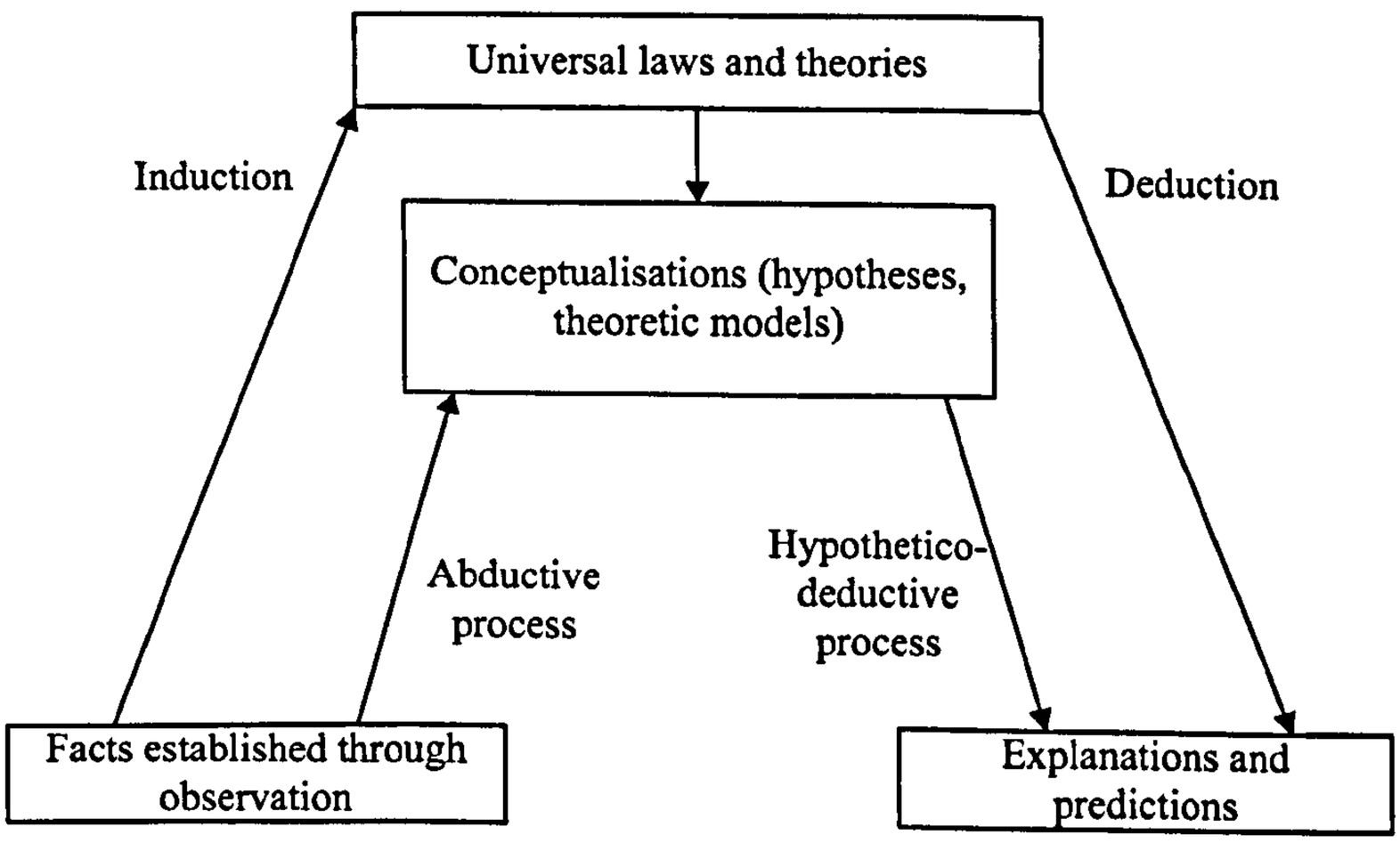
The validity criteria to be applied to constructivist approaches are less clear-cut. Based on the respective works of Ernst von Glasersfeld and Jean-Louis Le Moigne, Séville and Perret (2007) suggest that adequation (to a given situation) and teachability, which involves reproducibility, intelligibility and constructability, are among these criteria.

3.1.1.4 Logical processes guiding the construction of knowledge

Exploration and testing are two ways by which new knowledge may be generated (Charreire and Durieux, 2001). They rely on different processes qualified as inductive, deductive or abductive (David, 1999). Induction starts from a series of observations from

which some universal laws, hypotheses, theories or research questions are inferred (Chalmers, 1982; Evrard et al., 2009). Deduction on the other hand uses the existing knowledge base to generate hypotheses (hypothetico-deductive method) which are then tested against some real situation (Evrard et al., 2009). Finally, abduction is a process combining components from both of these approaches. It starts with an inductive approach which is used to generate hypotheses that are then tested and discussed using a deductive approach (Evrard et al., 2009). These logical processes are summarised in figure 18 below. Deductive processes are often summarised as "moving from the general to the particular" while inductive ones are viewed as going "from the particular to the general" (Charreire and Durieux, 2001, p.55).

Figure 18: Logical processes and scientific knowledge
Source: Charreire and Durieux (2001, p.55) based on an adaptation from Chalmers (1982)



Exploration concerns situations where the researcher looks to understand a phenomenon and possibly provide innovative theoretical solutions via an inductive process. It may be used by researchers from any of the previously discussed epistemological paradigms (Charreire and Durieux, 2001; Evrard et al., 2009). It can be theoretical (looking to connect theoretical concepts not previously linked in the literature), empirical (looking to infer new theoretical relationships from data) or hybrid (shifting back and forth between observation and theory in an abductive manner) (Charreire and Durieux, 2001). Testing on the other

hand refers to the confrontation of a theoretical object with reality via a deductive process and is clearly associated with positivism (Charreire and Durieux, 2001).

Together with the nature of the knowledge generated, the way it is generated and its value and status, the presentation of logical processes mobilised by a research project represents the fourth point to be addressed from an epistemological standpoint. The next step consists in investigating how entrepreneurship scholars have been positioning themselves with regards to these four points.

3.1.2 Epistemology of entrepreneurship research

Kuhn (1962) saw science as progressing through a seemingly "endless process of pre-science – normal science – crisis-revolution – new normal science – new crisis" and so on (Chalmers, 1982, p.150, original in French, my translation). In addition, regarding the questioning of the scientificity of social sciences he suggested that this is no longer a concern once a discipline reaches agreement over one or a limited number of unifying paradigms (its 'disciplinary matrix') or in his own words "when the group that now doubts their own status achieve consensus about their past and present accomplishments" (Kuhn, 1962, p.161). He also suggested that during pre-paradigm periods it is very hard to identify progress within the variety of research projects pursuing different endeavours and that the identification of a unifying paradigm increases both the efficiency and the effectiveness of research in the concerned discipline by channelling the efforts of its members (Kuhn, 1962).

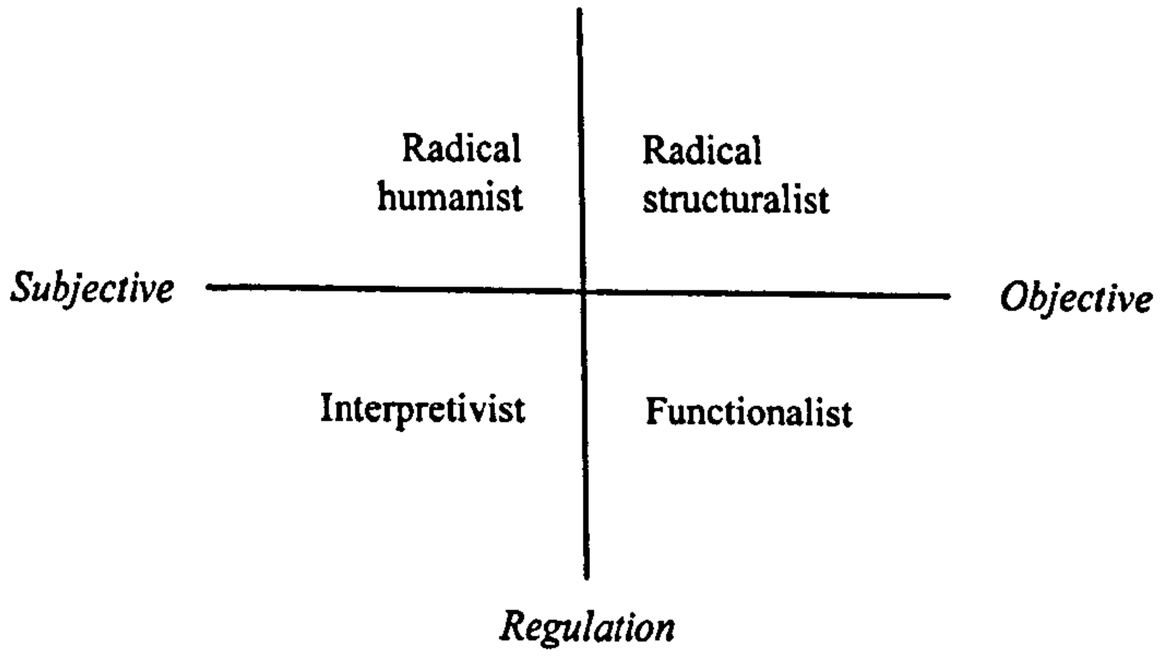
For entrepreneurship scholars, this view has triggered the quest for a unifying purpose that could bring them together and foster the recognition of the field as a distinct scientific discipline. In fact, it has been questioned whether the field should evolve towards a 'unitary normal science view', a 'multiple paradigm view' or a 'totally pragmatic, antipositivist view' (Aldrich, 1992, p.208). In an attempt to find some consensus, several definitions have been

and continue to be proposed for the field (Knight, 1921; Schumpeter, 1947; Kirzner, 1982; Gartner, 1988; Low and McMillan, 1988; Bruyat and Julien, 2000; Shane and Venkataraman, 2000; Sarasvathy, 2001; Davidsson, 2005). Readers may refer to section 2.1.2 of the literature review for details about these various propositions.

As a result of this variety of communities, the field is viewed as being 'still in its infancy' (Bygrave, 1989; Brazeal and Herbert, 1999b), an 'emerging field' (Busenitz et al., 2003), in a 'pre-paradigm' stage (Verstraete and Fayolle, 2005) or, more recently, 'in its adolescence' (Blackburn and Kovalainen, 2009). Still, the fact that it has so far not been possible to find a common definition has led some to suggest that the field should start by acknowledging the existence and intellectual richness of its diverse research communities and rely on them to generate theoretical advances (Gartner, 2001; Gartner et al., 2006).

Grant and Perren (2002) used a framework developed by Burrell and Morgan in 1979 (figure 19) to assess whether some form of paradigmatic assumptions guided entrepreneurship research. In their framework, the vertical axis represents whether researchers are interested in explaining "how organisations and society maintain order" (regulation) or "radical change in organisations and society" (radical change), while the horizontal axis describes the view of the reality adopted by the researcher on a subjectivist (anti-positivist) to objective (positivist) continuum (Grant and Perren, 2002, p.187).

Figure 19: Burrell and Morgan's (1979) paradigmatic framework
Source: quoted by Grant and Perren (2002, p.187)



Based on a sample of entrepreneurship articles published in 2000, they concluded that most entrepreneurship research could be classified as 'functionalist', i.e. considering reality as objective, looking to uncover how the society is regulated, viewing the world from a determinist standpoint and adopting a nomothetic methodology. A few exceptions were identified as belonging to the 'interpretivist' category, i.e. also looking to uncover the society is regulated but adopting a more constructivist stance involving room for voluntarism and adopting an ideographic methodology (Grant and Perren, 2002).

More generally, the entrepreneurship field has progressively been evolving from positivism towards a more constructivist view (Fayolle, 2002). This evolution can be understood in light of the general recognition that management as an object of study complies poorly with the principles of positivism previously outlined. For example, it lacks a tangible reality, it evolves as the researcher describes it, it is impossible to analyse without influencing it and it does not lend itself well to a uniform logic (Le Moigne, 1990). In fact Johnson and Onwuegbuzie (2004, p.16) contend that "the conduct of fully objective and value-free research is a myth, even though the regulatory ideal of objectivity can be a useful one".

The contextuality of entrepreneurship is also recognised as an important factor to be taken into consideration (Amit et al., 1993; Brännback et al., 2006). In addition, 'human volition' has long been recognised a major component in the initiation of entrepreneurial processes (Bygrave and Hofer, 1991). The strong deterministic assumption embedded in positivism is therefore clearly problematic for entrepreneurship researchers (Bruyat, 1993; Emin, 2003) who view entrepreneurship as an inherently intentional and dynamic process (Aldrich and Martinez, 2001; Shane et al., 2003).

The tendency away from positivist approaches towards more pragmatic ones had been noted by Aldrich some time ago (1992, p.210) when he suggested: "Since we belong to the social science field perhaps most closely in touch with its practitioner constituency, I doubt

that we will ever stay far from the pragmatic consciousness that attracted many of us to the field in the first place." This is apparent in later propositions for adopting a pragmatic approach when undertaking research in the field (Wicks and Freeman, 1998; Johnson and Onwuegbuzie, 2004). According to Johnson and Onwuegbuzie (2004), such an approach involves assessing ideas based on their empirical and practical consequences, selecting a 'methodological mix' based on the specific needs of the situation considered and applying a value-driven approach to research as reflected by the cultural values that the researcher is willing to promote.

In fact, in addition to scholars and entrepreneurs, entrepreneurship research seems to be gathering the interests of several stakeholders in the community such as policy makers, educators and practitioners (Grant and Perren, 2002; Blackburn and Kovalainen, 2009; Short et al., 2010). The influence of non-academic stakeholders on the quality of the research produced by scholars from the field might not always have been positive as it may have distracted some from crafting their research projects as rigorously as might have been desirable (Blackburn and Kovalainen, 2009) or led them to leave aside theoretical issues to favour practical issues (Short et al., 2010). As a result, entrepreneurship researchers are urged to refrain from blindly accepting the 'received wisdom of enterprise discourse' that is reflected by their predominantly 'functionalist' approach (Grant and Perren, 2002) and to make their agendas and ideological assumptions explicit (Blackburn and Kovalainen, 2009).

3.1.3 Epistemological positioning of this research

The 'pragmatic consciousness' mentioned by Aldrich (1992) was clearly one of the elements that initially triggered the current research. The author was initially guided by the wish to contribute to a better understanding of French nascent entrepreneurship in general and of the interactions between nascent entrepreneurs and business support actors in

particular. The epistemological and methodological choices presented below reflect that initial agenda.

As pointed out by Bruyat (1993, p.145, original in French, my translation) "positivism implies a natural world in which the objects studied cannot have operating intentions". Hence, adopting a positivist approach and its deterministic view would imply eliminating the individual entrepreneur as a legitimate object of study (Emin, 2003). The role attributed to nascent entrepreneurs in this research clearly illustrates that this approach does not reflect the view of the author. On the other hand, it also seems difficult to consider that nascent entrepreneurs evolve free of any external constraints as a constructivist view would imply. They each have a unique personal history that led them to consider an entrepreneurial career and they evolve in a social context that influences their actions. In such a context, adopting either a pure positivist or a pure constructivist view did not seem appropriate.

As a result, following Bruyat (1993) and Emin (2003), the stance adopted here was a mixed one drawing on interpretivism, one where the actions of individuals were considered as resulting from some degree of individual and social determinism and some degree of personal intentionality independent from this external context. This posture made it possible to study nascent entrepreneurs as 'strategic actors' (Emin, 2003).

Returning to Séville and Perret's (2007) classification, the knowledge generated by this research was achieved by means of understanding. It required both understanding the perceptions of nascent entrepreneurs involved in start-up projects and how these could be related to the context in which the specific research was undertaken. The research process followed by this thesis was an *abductive* one, i.e. a combination of both inductive and deductive approaches. Such a method was deemed appropriate to achieve the goal set by Oakley (1999, p.252) as providing "some sort of approximation to what is 'really' going on". In a first stage, the author was involved in a company start-up project and undertook

several actions with the objective of starting her own company. At that time, she entered the field of entrepreneurship with no pre-conceived theoretical idea about the topic. It was however that experience which gave rise to the idea of this thesis research. As a result, the decision was taken to withdraw the then considered start-up project and instead to engage directly in entrepreneurship research.

Following this decision, a theoretical exploration of entrepreneurship literature was undertaken. The aims of this exploration were to gain a better understanding of the research currents prevailing in the field and to produce the research models to be subsequently tested in a deductive manner. That stage involved surveying the existing literature and interviewing expert practitioners in regular contact with nascent entrepreneurs and resulted in the design of two models (one for the project-level analysis and one for the individual-level analysis). The theoretical foundations for these models were discussed in chapter 2. While primarily inspired by intentional frameworks (Ajzen, 1991; Krueger and Carsrud, 1993), these models also looked to integrate resource-based theory aspects (Chrisman and McMullan, 2000) and in particular human capital and social capital resources (Aldrich and Martinez, 2001; Kim et al., 2006; Linan and Santos, 2007). A list of gestation behaviours (Reynolds, 2000; Gartner and Carter, 2003) was also adapted to the French context in order to measure the level of advancement at which the projects studied were first captured, i.e. their level of advancement at the time of the initial survey. The final stage of the research involved testing hypotheses derived from these models using a hypothetico-deductive method and analysing the results of these tests. By adopting this approach, the author concurs with Brännback et al. (2006, p.8) when they state that "while it is obvious that entrepreneurship research does not represent a field of positivistic theory development it does appear that the field cannot accept theories that are not generated this way." The models developed in order to be able to apply this hypothetico-deductive process are presented in the next section.

3.2 Research models

The models developed for this study were adapted from some existing ones discussed in the literature review presented in chapter 2. The constructs shown in these models are also drawn from the literature. However, given the variety of labels and definitions used in the field, definitions directly applicable to the current thesis are provided for clarity (table 4). Their detailed operationalisations (underlying items or categories for example) are specified in the next section describing the construction of the questionnaires.

Table 4: Model's constructs definition

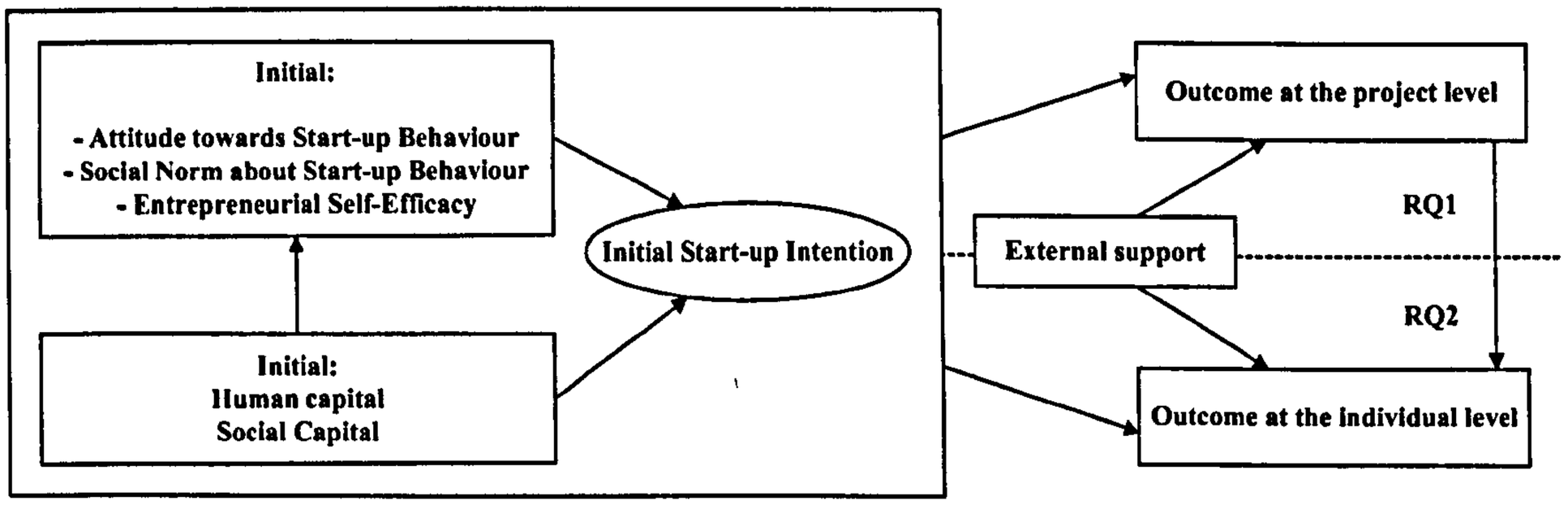
Construct name	**Definition**
Attitude towards start-up behaviour	Degree of favourableness felt towards being self-employed as opposed to being employed by someone else
Social norm about start-up behaviour	Degree of social pressure felt by an individual towards starting up their own activity
Entrepreneurial self-efficacy (ESE)	Individual's perceived capability to undertake the necessary actions to start their own activity.
Start-up intention	Degree of intention to start one's independent activity
Start-up	Creation of independent activity (sole proprietorship or incorporated business) (i.e. includes only de novo start-ups, not take-overs)
Human capital	Personal knowledge emanating from an individual's education, training or work experiences.
Social capital	Knowledge available through the mobilisation of an individual's network
External support	Support received from people not directly involved in the project

It can be seen in table 4 above that attitude, social norm, entrepreneurial self-efficacy and intention are all based on self-assessments on the part of the individual. In this thesis, when discussed collectively they are therefore referred to as 'entrepreneurial perceptions'.

The main research problem presented at the end of chapter 2 included two levels of analysis: **What are the determinants of the outcomes of nascent venturing processes in terms of (1) started vs. withdrawn projects and (2) changes in individuals'**

perceptions towards entrepreneurship? The overall model describing this main research problem is presented in figure 20.

Figure 20: Overall model for the research



As two levels of analysis are present in this general research problem, two research questions were used to guide the investigation. Each involved the design of a dedicated research model. These are presented in the next two sub-sections.

3.2.1 Model for Research Question 1: nascent venture level

The first research question to be tackled was: **What factors determine whether a nascent project gets realised?** In order to answer this question, Model A (figure 21) was developed. This model was primarily influenced by Krueger and Carsrud's (1993) adaptation of Ajzen's (1991) Theory of Planned Behaviour to entrepreneurship and Linan and Santos' (2007) Entrepreneurial Intention Model with Cognitive Social Capital. Model A actually shares similarities with the one since published by Linan and Chen (2009).

In the context of this thesis, the target entrepreneurial behaviour under investigation is the creation of an activity (whether in the form of sole proprietorship or incorporated business). For the sake of simplicity, this behaviour is therefore referred to as "start-up".

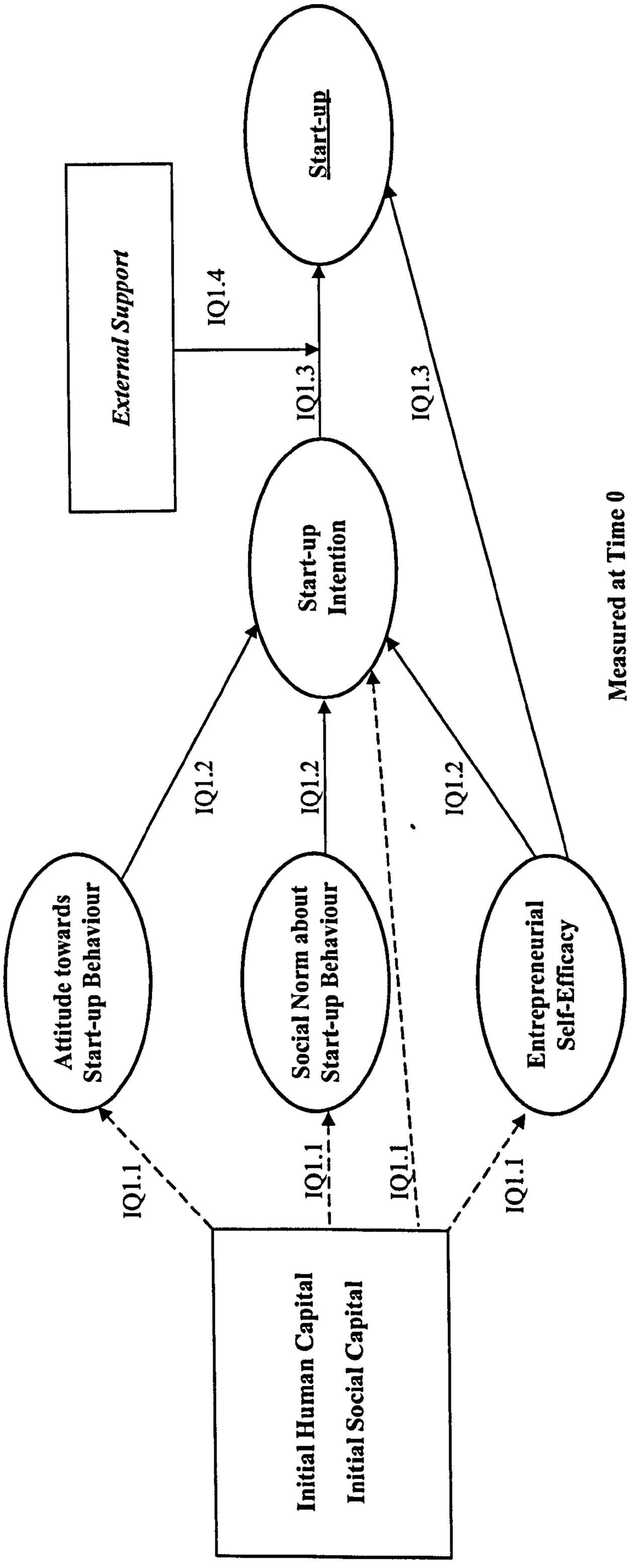


Figure 21: Model A – Nascent venture level research model

In addition, for clarity the 'social norm' designation (rather than 'subjective norm') selected by Krueger and Carsrud (1993) was retained for this model. Finally, the choice was made to include entrepreneurial self-efficacy rather than perceived behavioural control. This follows the approach selected by several entrepreneurship scholars such as Krueger et al. (2000), Kolvereid and Isaksen (2006) or Boissin et al. (2008).

The analysis aimed at answering the first research question was undertaken in steps corresponding to successive portions of the model. Specifically, the analysis started with the variables on the left-hand side of the model and proceeded through to the start-up outcome on the right. This process is reflected in the identification of investigative questions presented below which can be seen as "sub-components" of research question 1.

For each research question, theoretically-driven proposition(s) were made concerning the pre-supposed relationships between the different constructs. In the data analysis sections, these were further sub-divided into testable hypotheses of relationships between different variables representing the constructs (previously defined in table 4).

Investigative Question 1.1: What is the impact of human and social capital on the entrepreneurial intention model elements?

- **Proposition 1.1.1:** the greater the initial human capital, the higher or more favourable is the initial (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention.

- **Proposition 1.1.2**: the greater the initial social capital, the higher or more favourable is the initial (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention.

Investigative Question 1.2: What are the determinants of nascent entrepreneurs' start-up intentions?

- **Proposition 1.2:** the higher or more favourable the initial (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy, the stronger is the initial start-up intention.

Investigative Question 1.3: What are the determinants of nascent venture outcomes (started or withdrawn)?

- **Proposition 1.3**: The higher the initial entrepreneurial self-efficacy and the stronger initial intention, the greater is the likelihood of actual start-up.

Investigative Question 1.4: What is the impact of external support on the development of nascent ventures?

- **Proposition 1.4.1**: The likelihood of actual start-up depends on the external advice and support that the nascent entrepreneur relies on during his preparation.

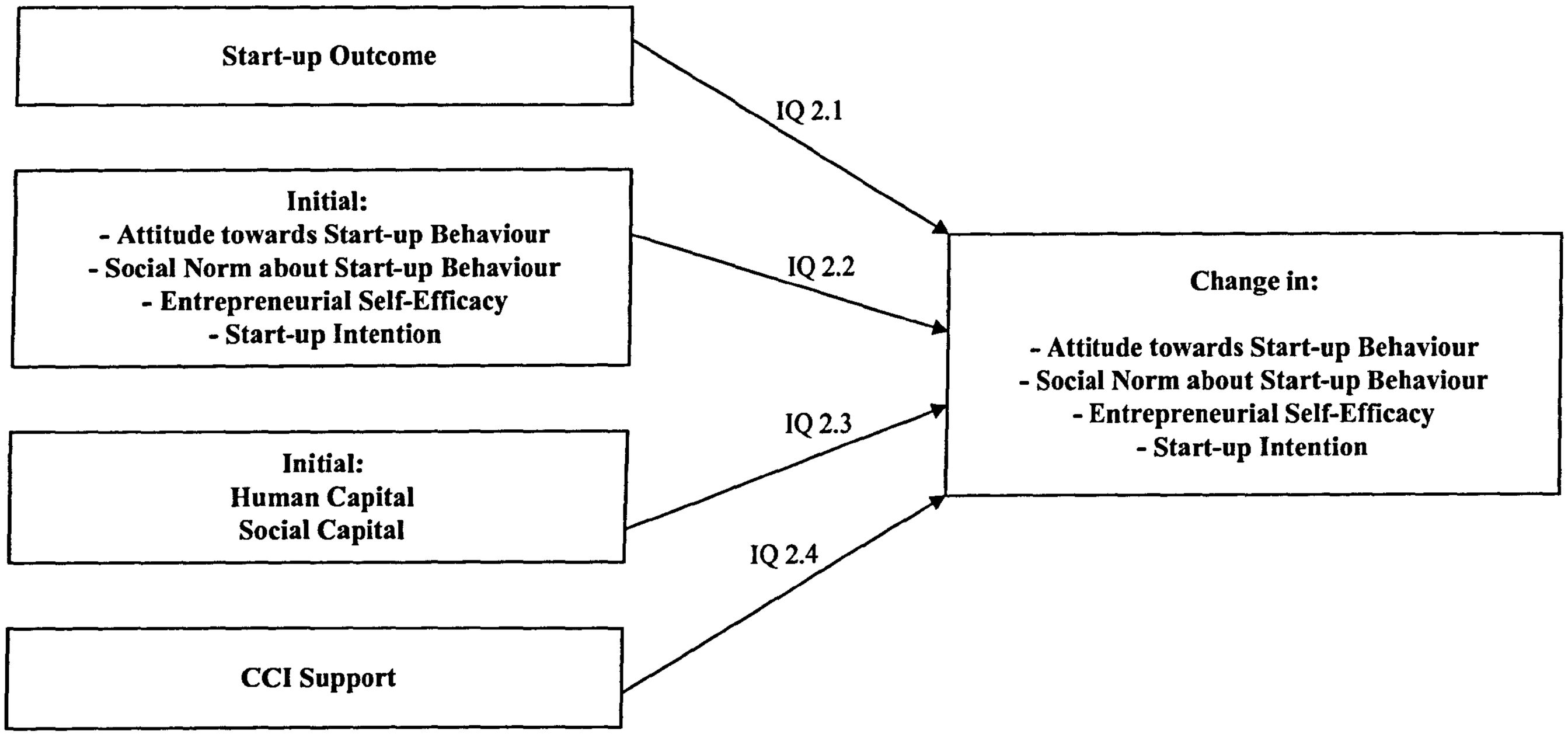
- **Proposition 1.4.2:** The greater the use of professional support, the higher is the likelihood of actual start-up.

Model A presented above (figure 21) summarises these various relationships to be tested in order to answer research question 1. On this model, for each relationship it is indicated the investigative question ("IQ") to which it is related.

3.2.2 Model for Research Question 2: nascent entrepreneur level

The second research question was: **How does a nascent venture experience affect the individuals involved in it?** To help answer this question, Model B (figure 22) was designed by adapting Souitaris et al's. (2007) and Fayolle and Gailly's (2009) models. The constructs used in this model were the same as for the first research question (see table 4 for definitions), but the level of analysis shifted from the start-up project to the nascent entrepreneurs themselves. The objective was to assess the evolution of the variables composing the intention model between the two data collection points.

Figure 22: Model B – Individual level research model



Experience may be a source of learning (Kolb, 1984). In addition, theory suggests that participating in a nascent venture project should result in an increase in entrepreneurial self-efficacy for individuals whose ventures were launched (i.e. successful experiences) but may result in a decrease in self-efficacy if the project could not be completed (Bandura, 1977). Furthermore, Peterman and Kennedy (2003) and Fayolle and Gailly (2009) showed that the initial intention level and previous exposure to entrepreneurial knowledge (such as entrepreneurial parents) may have an impact on this evolution. As a result, the investigative questions and their related propositions proposed to break down research question 2 were:

Investigative Question 2.1: What is the impact of a nascent venture experience on the change in a nascent entrepreneur's perceptions towards entrepreneurship?

- **Proposition 2.1**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy between T0 and T1 is (a) positive for people whose activities started and (b) negative for people whose projects were withdrawn. The change in (4) start-up intention between T0 and T1 is negative for people whose projects were withdrawn.

Investigative Question 2.2: How is the change in a nascent entrepreneur's perceptions towards entrepreneurship related to the initial level of each element?

- **Proposition 2.2**: There is a significant negative relationship between the change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention between T0 and T1 and the respective initial level of each variable.

Investigative Question 2.3: What is the impact of previous knowledge on the change in a nascent entrepreneur's perceptions towards entrepreneurship?

- **Proposition 2.3.1**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy and (4) intention between T0 and T1 differs depending on initial human capital.
- **Proposition 2.3.2**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy and (4) intention between T0 and T1 differs depending on initial social capital

Investigative Question 2.4: What is the impact of the use of professional support on the change in a nascent entrepreneur's perceptions towards entrepreneurship?

- **Proposition 2.4**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention between T0 and T1 is more positive for people who made use of CCI support than for those who did not.

These relationships are indicated in Model B (figure 22) above as IQ 2.1 to IQ 2.4. In the next section, the way the data necessary to undertake an actual analysis of these pre-supposed relationships was collected is presented.

3.3 Implementation of the data collection

In order to have data on which to base the analysis of the above models, a sample of French nascent entrepreneurs willing to participate in the survey had to be located. In the following sub-sections, the way this was achieved is therefore described.

3.3.1 Locating and following a sample of French nascent entrepreneurs

When undertaking research with nascent entrepreneurs, the choice of a sample involves some trade-offs. Given the low percentage of nascent entrepreneurs among the general population, if one sought to identify a representative sample of them from that population, screening of extremely large samples would be necessary to obtain a meaningful study

group and would thus involve considerable resources for the data collection (Reynolds, 2000; Davidsson, 2005). Another option is to identify them from official registrars or via support networks, but this runs the risk of facing potential biases, such as selecting only survivors or network-champions (Davidsson, 2005; Katz and Gartner, 1988). In addition, hindsight bias has been shown to be particularly strong among nascent entrepreneurs (Cassar and Craig, 2009) and memory decay problems may also be present if these entrepreneurs are surveyed after the nascent venturing process has been completed. For the present study, the main objective was to be able to collect data from the same nascent entrepreneurs in two successive years so as to limit such hindsight biases. This was in order to be able to assess the outcome of the projects and to be able to measure actual evolution in intention model elements.

Research undertaking investigation of the nascent venturing process involving some longitudinal element has often relied on secondary data analysis of large-scale existing databases. Readers may refer to Kim (2006) and Samuelsson (2004) for such research based on respectively the US and Sweden versions of PSED or to Henley (2007) for UK-based analyses. In the absence of such data for France, this study necessitated the collection of primary data. Some scholars in the US have worked in collaboration with Small Business Development Centres for their data collection (for example: Chrisman and McMullan, 2000; Chrisman et al., 2005) and this approach was also recently used in Austria by Kessler and Frank (2009) to identify a meaningful sample of nascent entrepreneurs. Given the lack of an existing longitudinal database concerning French nascent entrepreneurs, for this study too the choice of a partnership with a major support network was made.

3.3.2 Partnership with a French support network

During the theoretical exploration phase, a partnership was negotiated with the Regional Chamber of Commerce and Industry of Brittany in order to use their network to collect the

data for the study. The French Chambers of Commerce and Industry (CCI) network is a public institution run by entrepreneurs elected by their peers (ACFCI, 2008). This network is a major element in company creation support in France (Thiébaut et al., 2003). Throughout the country the Chamber's "Entreprendre en France" network is represented by over 200 branches offering support to aspiring, new and established entrepreneurs in their respective geographical areas.

These CCIs are here considered as providing similar services as the ones offered by the US Small Business Development Centres which served as data sources for many entrepreneurship scholars (Chrisman, 1989; Gatewood et al., 1995; Chrisman and McMullan, 2000; Chrisman et al., 2005). Specifically, the CCI local outlets offer similar services to nascent entrepreneurs throughout France: information centres, half-day information sessions about company creation, follow-up appointments with either CCI counsellors or partner professionals (accountant, lawyers, etc.) and possibly training sessions. Most of these services (except some specific training sessions) are offered free of charge. The Brittany Regional Chamber of Commerce and industry (CRCI) is a member of this larger network. In 2009, the Brittany CRCI network was in contact with over 9,900 individuals pursuing start-up projects (CRCI, 2010). Among these, the city of Rennes branch dealt with over 2,600 people and provided individual follow-up advice to 1,400 of them (CCI, 2010).

For this study, the managers of the city of Rennes branch were first contacted by the researcher in June 2007. Three meetings with them took place between June and September of 2007 to introduce the planned study and discuss a possible partnership. Following these discussions, the proposed study was then presented to Regional CRCI in October 2007 and other branches in the region were invited to participate. Managers from three other areas volunteered. They were visited by the researcher in the Spring of 2008. During these visits, the support offered to nascent entrepreneurs in each area was discussed

and the study was presented. Following these discussions, all branch managers agreed that the regular half-day information sessions held by their teams would provide a suitable setting for administering the initial questionnaire. They also agreed for the persons running these sessions to be in charge of the administration of the questionnaires.

The underlying population for this study was therefore that of Breton nascent entrepreneurs using the CCI support services during the pre-start-up phase. The data were collected through three questionnaire-based surveys. The initial questionnaire was administered between October 2008 and early January 2009 and the follow-up telephone and online questionnaires one year later. The choice for this one-year interval was based on information provided by a survey undertaken with nascent entrepreneurs in contact with several CCIs and which indicated that 90% of those who were polled wished to create their company within a year of the survey (IFOP, 2007). The questionnaires were designed by adapting existing scales and questions from the academic literature. They were submitted to the counsellors for feedback and pre-tested on 15 nascent entrepreneurs in contact with a CCI branch before being more broadly administered. The items included in these questionnaires are described in the next section.

3.4 Questionnaire elements

The data necessary to answer the investigative questions presented above were collected by means of three questionnaires. Questionnaire items used to measure the constructs included in the research models will now be presented. The three original questionnaires are presented together with their English translations in appendices 2 to 7.

Davidsson and Wiklund (2001) differentiated between micro- (such as the individual or the firm) and aggregate- (such as industry or region) levels of analysis. For the current research, the focus was on two micro-levels of analysis, as illustrated by the research questions. Outcomes were measured at both the nascent venture and the nascent

entrepreneur levels. The independent variables in the models were measured at the nascent entrepreneur's level. Finally, the control variables included one at the project level (the advancement of project at the time of the first questionnaire as measured by the number of gestation activities undertaken prior to attending the information session) and three at the nascent entrepreneur level (age, gender and employment status).

Several measurement items have been used by entrepreneurship scholars to operationalise the various constructs included in the two models presented above. They provided a starting point for designing the questionnaires. However, as discussed before, the operationalisation of many of these constructs varies from one author to another. In the following sections, summary information regarding the operationalisation choices made for this thesis is presented.

3.4.1 Human capital

In this study, four variables were selected from the existing literature to represent human capital (Davidsson and Honig, 2003; Shane and Delmar, 2004; Kim et al., 2006; Liao and Gartner, 2006; Carr and Sequeira, 2007). Two of them represented general human capital: general education level and years of work experience. The other two were indications of entrepreneurship-specific human capital: having participated in a previous start-up and having received prior training for company creation.

All were treated as binary variables. For education, the base case included people having fewer than two years of undergraduate university-level education (referred to as "Below Bac+2"). For experience, the base category was people with up to 10 years of work experience. For previous start-up experience and prior start-up training, the base case represented the absence of these experiences.

3.4.2 Social capital

Three binary variables were selected to represent social capital (Davidsson and Honig, 2003; De Clercq and Arenius, 2006; Kim et al., 2006; Ozgen and Baron, 2007). Two were related to informal social capital: the presence/absence of entrepreneurial parents and the presence/absence of entrepreneurial friends. The third one was related to formal sources in the form of the person's membership of a professional network.

3.4.3 Intentional framework items

In entrepreneurship research, antecedents of intentions (i.e. attitude, social norm and entrepreneurial self-efficacy in figure 21) are studied by either using general aggregate measures or by using measures of underlying beliefs. One problem, however, is that the variety of measurements of these different constructs in entrepreneurship has limited the comparability between the different studies (Chandler and Lyon, 2001). Given the newness of the use of intention-based models in entrepreneurship, the lack of comparability has been particularly apparent in this intention-related line of research (Kickul et al., 2005; Linan and Chen, 2009).

A further issue, not restricted to entrepreneurship research, concerns the appropriate number of possible responses to be included in the scales used for collecting data. In deciding this, researchers seek to identify "a scale with the optimal number of response alternatives", which Cox (1980, p.408) describes as one "refined enough to be capable of transmitting most of the information available from respondents without being so refined that it simply encourages response error". This debate is not new as indicated by Cox who refers to studies dated as far back as the early nineteen-hundreds. Today, the choice for psychometric scales seems to be primarily between 5- and 7- points (Colman et al., 1997). It is thus at the bottom of the range of what Miller (1956, p.81) called "the magical number seven, plus or minus two" in his review of a series of studies investigating the ability of

respondents to classify different stimuli (including audio, taste, physical or visual ones) appropriately. Concerning attitude-related scales, it has been suggested that, for scales including four or more categories, increasing the number of response choices tends to increase the reliability but at a decreasing rate (Alwin, 1992).

The statement that "if the number of response alternatives were to be established democratically, seven would probably be selected" (Cox III, 1980, p.407) could be seen as adapted to the context of TPB-based research. Ajzen himself (1991) and Ajzen and Driver (1992) used seven-point scales. In line with this, several scholars who have adapted Ajzen's model to entrepreneurship research have also used seven-point measures (Kolvereid, 1996b; Krueger et al., 2000; Fayolle et al., 2006; Boissin et al., 2007; Souitaris et al., 2007; Linan, 2008b). Following this line of relevant research, the choice was here made to use seven-point scales. In the following subsections, the intention-related items selected for this study are presented.

3.4.3.1 Attitude towards start-up behaviour

The initial attitude scale consisted of six items measured on seven-point Likert scales anchored on "completely disagree" and "completely agree". Following Kolvereid and Isaksen (2006) who also conducted research on working individuals rather than students, the choice was made to include Gundry and Welsh's (2001) opportunity costs items in the attitude scale. The phrasing of these items was slightly adapted to reflect the fact that this study concerned nascent entrepreneurs whereas Gundry and Welsh had surveyed existing entrepreneurs. In addition, two items were adapted from Linan and Santos (2007). The scale therefore consisted of the following statements, which appeared in the order listed:

- I would rather own my own business than pursue another promising career
- I would agree to work for someone else only long enough to implement my start-up project

- Overall, being an entrepreneur implies **more disadvantages** than advantages to me (reverse coded, in bold in the questionnaire)
- I would rather own my own business than earn a higher salary employed by someone else
- I am willing to make significant personal sacrifices in order to become an entrepreneur
- Among all possible professional options, I prefer to be an entrepreneur

3.4.3.2 Social norm

Following Kolvereid (1996b), Krueger et al. (2000), Kennedy et al. (2003) and Engle et al. (2010) the choice was here made to include both the perceived encouragement to start-up and the motivation to comply with it in the assessment of social norm. In addition, the four sources used by Krueger et al. (2000) were selected.

The social norm was therefore measured by multiplying the answer to the question "To what extent do you think the following people would encourage you to start your company?" by the answer to the question "How important is this person's opinion to you?" for each of the following four groups of referents: your close family, your best friends, your mentor / professional model and other people important to you.

3.4.3.3 Entrepreneurial self-efficacy

While Ajzen (1991) included perceived behavioural control in his model, the choice was here made to use Bandura's (1986) self-efficacy construct in the model. This follows Ajzen's (2001) recognition of the possible superior predictive power for intentions and actions of self-efficacy vs. perceived behavioural control. It also reflects the approach adopted by other scholars such as Krueger and Carsrud (1993), Kolvereid and Isaksen (2006), Carr and Sequeira (2007) or Boissin et al. (2008).

Two measures of entrepreneurial self-efficacy were included. For the first, a global entrepreneurial self-efficacy question asked respondents to rate on a seven-point Likert scale anchored on "not capable at all" and "completely capable" their perceived ability to start a company. For the other, a belief-based measure of entrepreneurial self-efficacy was adopted. Following De Noble et al. (1999) a list of specific tasks had been adapted to the French context (Boissin et al., 2004). This list served as the basis for the entrepreneurial self-efficacy scale used in this research. In addition, two items were added following the suggestion of CCI counsellors. As a result, the entrepreneurial self-efficacy list included in the questionnaire consisted of the following 16 items for which participants were asked how capable they felt of accomplishing the described action on a seven-point Likert scale anchored on "not capable at all" and "completely capable" (items marked with an asterisk * were the ones added by CCI counsellors):

- To identify a product or service idea

- To devote yourself body and soul to your project

- To evaluate a project's risks

- To identify relevant information about markets and clients

- To identify relevant information about competitors

- To manage people (to coordinate and motivate other people)

- To obtain bank financing

- To obtain proximity financing, from your close circle

- To attract equity investors

- To find competent people and organisations to help and advise you

- To complete the administrative formalities linked to the creation of an organisation

- To find competent people to work with you

- To select a legal status for your activity (*)

- To plan the start-up steps

- To estimate a start-up project's financial needs

- To present a project in a formal way (written or spoken) (*)

3.4.3.4 Start-up intention

In the literature, the dependent variable 'entrepreneurial intention' has also been the subject of a variety of proposed evaluations. Today more and more researchers use scale indices though consensus on how to measure the construct has yet to be reached (Thompson, 2009).

As for the operationalisation of attitude, Gundry and Welsh's (2001) study undertaken with working adults (rather than students) served here as the basis for operationalising intention. In addition, two items adapted from Fayolle et al. (2006) were included. As a result, the intention scale used here consisted of six items:

- I will do whatever it takes to become an entrepreneur

- I have the firm intention of becoming an entrepreneur one day

- There is no limit to how long I would give a maximum effort to establish my business

- I will do whatever it takes to make my business a success

- My company start-up project is the most important activity in my life

- I have the firm intention of becoming an entrepreneur in the coming year

3.4.3.5 Start-up behaviour

As mentioned in the literature review, very few intention-based studies integrate actual behaviour. One exception can be found in Kolvereid and Isaksen (2006) who asked

respondents how many hours per week, on average, they devoted to their business. However, measures have also been developed by scholars investigating nascent venturing processes in order to determine when a person should stop being considered a nascent entrepreneur or a business a nascent venture. Scholars use either self-reported status or identifiable milestones such as sales or business registration to determine the transition out of the nascent phase. In this research, the self-reported options used by Carter et al. (1996) served as the basis for identifying the status during the second data collection. In addition, as some respondents had attended the CCI information session without a real project in mind, another category was added to account for the particular composition of this initial sample.

As a result, start-up behaviour was measured by asking the respondent to answer the question "Regarding the project that you were pursuing last year, could you please tell us where it stands today?" by choosing among the four following options:

(1) The activity has started and is now up and running,

(2) You are still working on its implementation,

(3) You have given it up and are no longer working on it or

(4) You had come for general information purposes and have not worked on a start-up project since the meeting.

(5) Other (specify)

Legal registration being mandatory in France, for those who reported having started, this was confirmed by asking them the legal status they had selected.

3.4.4 External support

Studies of external professional support sometimes consider the type of support used, such as strategic, administrative or operational (Chrisman and Leslie, 1989) or count the number

of hours spent with a counsellor (Chrisman and McMullan, 2000; Chrisman et al., 2005). These previous authors also asked entrepreneurs to indicate whether they felt the service received was beneficial, whether they thought they could "have obtained assistance of the same quality from a private consultant at a price [they] were willing to pay", to rate the knowledge and expertise of the counsellor they worked with and the working relationship they had and to indicate whether they would recommend the organisation services to others (McMullan et al., 2001; Chrisman, 2008).

Large standardised surveys use different approaches. For example, the US PSED (previously described in sub-section 2.1.3.2) asks nascent entrepreneurs "How many other people, not on the start-up team, have been particularly helpful to you in getting the business started?" (Reynolds, 2000, p.212) and collects detailed information about up to five people mentioned as being the most important. In the French SINE survey (presented in sub-section 2.1.1) business founders are asked whether the most useful advice for their project came from (1) their familial or personal circle, (2) their professional circle, (3) one or more professional counsellors, (4) one or more organisations specialised in company creation or (5) that they received no useful advice (INSEE, 2005). In addition, respondents to that survey are also asked whether the start-up was facilitated by existing relationships with suppliers, clients or a former employer.

For the current study, the SINE questions regarding the most useful source of advice and possible start-up facilitators were included. In addition, the PSED measure of number of people having provided significant help was also incorporated. Regarding the use of CCI services, it was first checked whether people made further use of CCI services after the information session. People who answered yes to that question were asked to indicate which services they used among a list including meeting with CCI counsellor or accountant or lawyer, training and other. These categories had been determined following the individuals discussions with CCI support branch managers.

3.4.5 Project advancement

During the discussions with CCI counsellors, it was apparent that the aspiring company founders who contact them do so at varying degrees of project advancement. In order to control for this variety in pre-information session preparation, the list of gestation behaviours discussed in the literature review was used to provide an indication of where individuals stood in their project. Specifically, the PSED US list (Reynolds, 2000) presented in appendix 1 was adapted to the French context and presented to the CCI counsellor for validation. As a result, nascent entrepreneurs were asked to indicate whether they had undertaken any of the following activities prior to attending the information session:

- Preparation of a business plan

- Contacts to obtain financing

- Contacts with suppliers

- Full time work on this project

- Search for public aids

- Purchase of equipment (computer, furniture...)

- Purchase of raw materials or supplies

- Gathering of information regarding administrative formalities for company creation

- Meeting with potential clients

- Registration of patent, name or trademark

- Training about company creation (included in human capital, not counted as a behaviour)

- Preparation of financial forecasts

- Taking advice from professionals about the implementation of the project

- Savings to invest in the project

- Design of prototypes

- Other(s) (please specify)

3.4.6 Other questionnaire items

Some demographic information, some of which represented human capital elements, was collected on the research questionnaire. It included number of years of work experience, but also some elements that were not used in the actual data analysis (nationality, marital status). Other demographic information was collected directly by the CCIs via the information sheets they normally distribute at information sessions (age, gender, education level, employment status and level of employment). In order to avoid duplication, these were not repeated in the research questionnaire.

In addition to the above elements, some information was collected that was not used in the current thesis but meant for later analysis. The reason for adopting such an approach was that given the difficulty of locating French nascent entrepreneurs, the choice was made to rely on this data collection to gather data for future research. It was felt that results from the thesis could suggest areas for future investigation that could be conducted using these data.

In the first questionnaire this included information concerning the reason for which the individuals were interested in company creation and the project they were pursuing (sector, investment needed, number of people involved). Individuals who indicated knowing entrepreneurs or having been involved in a previous start-up project were asked to rate their perception of these experiences on a seven-point Likert scale anchored on "extremely negative" and "extremely positive". In addition, people who indicated being unemployed were asked what they would do if a salaried job was offered to them: 'accept it', 'continue

with the start-up project', 'accept it while continuing with the start-up project' or 'don't know'.

In the second questionnaire (delivered by telephone), information was also collected regarding the type of project started or pursued, financing elements, information about the people involved in the project and, for those whose activity had started, growth prospects.

In addition, questions taken from McMullan et al. (2001) concerning satisfaction and possible recommendation to others, assessment of counsellors' knowledge and expertise and of working relationship with them were also included. Finally, the third (internet-based) questionnaire included the intention model elements as well as the Cognitive Style Index questions developed by Allinson and Hayes (1996).

Before undertaking the data analyses presented in chapters four to six, some choices had to be made concerning which cases to include in the analysis. In other words, some sample cleaning decisions were made. These are described in the next section and brief description of the characteristics of the sample retained for analysis is provided.

3.5 Response rates and initial sample cleaning

The initial questionnaire was self-administered. It was delivered to the nascent entrepreneurs at the beginning of the half-day information sessions on company creation that took place between October 2008 and January 2009 in the CCI branches that had agreed to participate in the study. The counsellors who ran the information session were in charge of distributing the questionnaires and collecting them immediately after they were filled out (appendices 2 and 3). Participation in the survey was voluntary. 506 questionnaires were returned by the CCI branches of which eight had been collected during a training week rather than at a general information session. The information sessions had been attended by 592 people so that the initial response rate to the first questionnaire was 84.1% (498/592).

Participants were then re-surveyed one year later in order to collect information about their progress (information about the status of the nascent venture) and the use they made of external support during the elapsed year (appendices 4 and 5). This second survey was administered by telephone by the researcher. Some of the questions, such as growth potential or reasons for abandonment, varied depending on the status of the nascent venture. As a result, only questions pertaining to the screened status were administered. Finally, people who participated in the telephone survey were asked whether they would agree to answer a final 15-minute questionnaire online (appendices 6 and 7). This final questionnaire was administered using the SurveyMonkey online questionnaire tool (www.surveymonkey.com) or by sending a paper version to respondents who did not have Internet access.

For the second data collection, the 506 persons who had responded to the initial questionnaire were called back by the researcher. Among them, 112 could not be reached which prevented the status of their project from being determined. Three persons refused to answer the telephone questionnaire, though two of them did indicate the project status. In addition, 11 people could not be reached directly, but the status of their project was indicated either by their mother or father, spouse or partner in the project. As a result, project status was identified for 394 of the 506 respondents (77.9%). These 394 responses provided the basis for the data analysis related to the first research question: What factors determine whether a nascent project gets realised?

Each respondent to the telephone questionnaire was asked if they would agree to answer the last part of the survey, which consisted of a 15-minute Internet-based questionnaire containing the intention-model items and the cognitive style index questionnaire. Those who did not have access to Internet were offered a paper version of the questionnaire (sent with a stamped return envelope). The details concerning the response rates to this last questionnaire are given in table 5 below which also summarises response rates for previous

waves. Ultimately, 228 responses were collected for the final questionnaire. These 228 responses provided the basis for the data analysis related to the second research question: How does a nascent venture experience affect the individuals involved in it?

Table 5: Summary of response rates for successive waves of the study

	Absolute number	% of initial	% of wave 2
Initial sample	506	100.0%	N/A
Reached Wave 2 - Telephone	**394**	**77.9%**	**100.0%**
Telephone follow-up			
Refusal to answer	3	0.6%	0.8%
Status provided by other person	11	2.2%	2.8%
Refusal to participate in Internet	29	5.7%	7.4%
Paper version sent	31	6.1%	7.9%
Paper reply returned	**17**	**3.4%**	**4.3%**
Internet version sent	312	61.7%	79.2%
Internet reply returned	**211**	**41.7%**	**53.6%**
Overall replies to final questionnaire	**228**	**45.1%**	**57.9%**

3.5.1 Sample cleaning decisions

While the initial data collection returned 506 questionnaires, not all of these could be included in the analysis. First, the 112 people who could not be reached for the second data collection had to be removed from further data analysis as their projects' status could not be assessed. Another eight questionnaires had been collected not at an information session, but rather during a one-week training session. As this indicated that they had already passed the information session and could have introduced biases in their responses, they were also eliminated. In addition, not all respondents had a real nascent entrepreneurial interest. In order to constitute a coherent sample, the choice was made to eliminate such cases from the final analysis. The reasons for their removal are listed in table 6 below.

As a consequence, cases retained included only people who indicated that they had either started, withdrawn, or were still working on a company creation project. This resulted in the retention of 325 cases for the analysis.

Table 6: Sample cleaning – Reasons for removal of cases

Reason	Number of cases
Had come for information purposes only	20
Had come to accompany another person	2
Interested in acquiring an existing business (not pure start-up)	22
Students attending as part of a class assignment	9
Questionnaire collected during a training week	8
Other (e.g. activity started but in the process of being closed down)	8
Total number of cases removed	69

3.5.2 Characteristics of the retained sample

In order to check the impact of non-response and non-entrepreneurial cases elimination on the sample features, a series of tests were undertaken to compare the cases selected for analysis (selected) and the overall initial sample. Specifically, their characteristics in terms of age, advancement at the time of the information session (count of gestation behaviours), gender, employment status (active or not), education level, years of work experience, participation in a previous start-up, presence of entrepreneurial parents, presence of entrepreneurial friends and membership of a professional network were checked.

Differences in age and advancement were checked using t-tests. All the other variables were categorical and differences were therefore checked using Chi-square tests. Table 7 below provides a summary of the characteristics of the overall initial sample and the selected cases. Given missing data in some of the variables, the number of cases included may vary from one test to another. Only for age was a slightly significant difference identified with the retained cases 1.4 years older than the ones present in the initial sample.

In addition to the characteristics detailed in table 7, the sample used for the analysis of the first research question included 34.8% (113) of individuals who reported having started their activity, 52.9% (172) who reported having withdrawn their project and 12.3% (40) who said they were still working on it.

Table 7: Descriptive statistics of initial samples

		Overall Sample ($n_0 = 506$)	Selected cases ($n_1 = 325$)	Significance level (t-test or Chi²)
Advancement at T0 ($n_0 = 495$; $n_1 = 317$)	Count of gestation behaviours at T0	2.80	2.77	0.859 (t-test)
Age ($n_0 = 478$; $n_1 = 305$)	**Average age**	**34.6**	**36.0**	**0.063 (t-test)**
Gender ($n_0 = 505$; $n_1 = 325$)	Male	58.6%	57.5%	0.759 (Chi²)
	Female	41.4%	42.5%	
Employment status ($n_0 = 469$; $n_1 = 306$)	Not active	60.8%	59.2%	0.653 (Chi²)
	Active	39.2%	40.8%	
Education ($n_0 = 482$; $n_1 = 308$)	< Bac + 2	49.8%	45.5%	0.234 (Chi²)
	≥ Bac + 2	50.2%	54.5%	
Work experience ($n_0 = 432$; $n_1 = 279$)	≤ 10 years	57.4%	53.8%	0.339 (Chi²)
	> 10 years	42.6%	46.2%	
Previous start-up project ($n_0 = 480$; $n_1 = 307$)	No	83.5%	83.7%	0.949 (Chi²)
	Yes	16.5%	16.3%	
Prior start-up training ($n_0 = 496$; $n_1 = 318$)	No	85.3%	85.5%	0.921 (Chi²)
	Yes	14.7%	14.5%	
Entrepreneurial parents ($n_0 = 487$; $n_1 = 310$)	No	66.3%	70.0%	0.279 (Chi²)
	Yes	33.7%	30.0%	
Entrepreneurial friends ($n_0 = 484$; $n_1 = 308$)	No	29.1%	26.9%	0.506 (Chi²)
	Yes	70.9%	73.1%	
Network member ($n_0 = 441$; $n_1 = 284$)	No	71.4%	69.7%	0.621 (Chi²)
	Yes	28.6%	30.3%	

Seven persons did not answer the question concerning nationality. Of those who did, the vast majority (302 persons or 95%) were French. 5 persons (1.5%) reported being non-French Europeans and 11 (3.5%) non-French non-European.

3.6 Summary of chapter 3

In this chapter, the epistemological positioning of the thesis was presented. It was shown that the stance adopted here is neither extreme positivism nor constructivism, but one that is closer to interpretivism. As a result, knowledge was generated by means of understanding of the reality that the researcher was faced with. This was done via an abductive process. That process started with the researcher's own experience of the development of a start-up project in France. It then involved a theoretical exploration, as reflected in the presentation of the existing literature in chapter 2, which resulted in the

building of two research models. These models were then used to derive a series of investigative questions to which a hypothetico-deductive method of testing was then applied. This stance implies that the results presented here are not meant to be generalisable to all entrepreneurial contexts. Rather they look to provide a better understanding of the nascent venture experiences of a group of French nascent entrepreneurs and in this way to contribute to the overall field of nascent entrepreneurship research

The next three chapters are dedicated to data analysis. All analyses were undertaken using the SPSS 17.0 software and Microsoft Excel 2007. Before undertaking the tests related to the two research questions, a purification of the measurement instrument was conducted. The process followed for this instrument purification and for the determination of the composition of the actual measurement scales used in the subsequent data analyses is described in the next chapter.

4. Measurement instrument: purification and scales assessment

Operationalisation issues are one topic of ongoing discussion in entrepreneurship literature (recent examples include: Linan and Chen, 2009; McGee et al., 2009; Crook et al., 2010). The choice was therefore made to devote a chapter to the item selection and scale building procedures that were used in this study.

Since the questionnaire items were drawn from a variety of sources in the literature, exploratory factor analysis was used as a first step to undertake a purification of the measurement instrument. Following this, scale assessment measures were conducted in order to ensure the unidimensionality of each identified construct and the reliability of the related scales. The resulting scales were analysed with the objective of proposing possibilities for their improvement for future studies. These different aspects are discussed in this chapter.

4.1 Objectives of the purification process

When undertaking multivariate data analysis, researchers have to deal with 'measurement error'. This refers to the discrepancy between the values obtained through the measurement instrument, which may reflect effects caused by the instrument itself, and the "true" underlying values (Hair et al., 2010). In order to reduce this measurement error as much as possible, the issues of the *validity* and the *reliability* of the constructs used in the analysis must be addressed. 'Validity' ensures that the measure selected provides an adequate representation of the construct studied and 'reliability' that it is free of measurement error and thus represents a 'true' value (Hair et al., 2010).

Different elements need to be considered when assessing construct validity. Face or content validity refers to the extent to which the selected items are representative of the conceptual definition and different aspects of the construct studied (Drucker-Godard et al.,

2007; Hair et al., 2010). In this study, the selected items were drawn from existing scales to provide assurance of such validity. In addition, for all constructs, *convergent validity* - strong correlations among variables supposed to measure the same construct - and *discriminant validity* – clear boundaries or low correlation between variables representing different constructs - must be assessed (Drucker-Godard et al., 2007). Assessment of convergent and discriminant validity for the constructs included in this study was done via factor analysis as described in section 4.2. Reliability appraisal of the scales identified using this factor analysis was then undertaken using Cronbach's alpha and inter-item correlation measures. They are discussed in section 4.3.

Churchill (1979) suggested undertaking the measurement instrument purification analysis and the final analysis on data collected at two different stages. However, practical matters prevented the strict application of this recommendation in the context of this thesis. Rather, following the approach undertaken in previous doctoral theses (Gueguen, 2001; Tounés, 2003), purification of the instrument and data analysis were undertaken on the same data set.

Actual sources and choice for the questionnaire items were discussed in chapter 3. Items related to the intention portion of the research models are summarised in table 8: for each one the corresponding question number (Q1 refers to questionnaire 1) and the wording (translated from French) are provided. The first questionnaire in which these items were used is shown in appendices 2 (original French version) and 3 (translated English version) for reference.

Table 8: Intention model questionnaire items

Variable and measurement level	Questionnaire Item	Question
"Attitude" 6 items 7-point Likert scale anchored on "Completely disagree" and "Completely agree"	Q1_20 to Q1_25 Q1_20 = "att_career_pref" Q1_21 = "att_work_waiting" Q1_22 = "att_disadv" (RC) Q1_23 = "att_own_vs_salary" Q1_24= "att_sacrifice" Q1_25 = "att_all_options"	Indicate what you think of each of the following statements: I would rather own my own business than pursue another promising career I would agree to work for someone else only long enough to implement my start-up project Overall, being an entrepreneur would comprise **more disadvantages** than advantages for me I would rather own my own business than earn a higher salary being employed by someone else I am ready to make important personal sacrifices to become an entrepreneur Among all possible professional options, I prefer to be an entrepreneur
"Social Norm" 4 pairs of items 7-point Likert scales multiplied A: " Would encourage you to start a company" from "No, rather the opposite" to "Yes, strongly" B: "To you the opinion of these people matters..."from "No, not at all" to "Yes, extremely"	Q1_26A to Q1_29B Q1_26AxB = "sn_fam" Q1_27AxB = "sn_friends" Q1_28AxB = "sn_mentor" Q1_29AxB = "sn_other"	Regarding your close circle, please indicate: (A) To what extent you think they would encourage you to start your own company? Then: (B) How important is this persons' opinion to you? Your close family Your best friends Your mentor / professional model Other people important to you

Table continued next page .../...

Table 8 (continued): Intention model questionnaire items

Variable and measurement level	Questionnaire Item	Question
"ESE" (Entrepreneurial self-efficacy) 16 items 7-point Likert scales anchored on "Not capable at all" and "Completely capable"		Regarding the next list: Indicate on the numbered scale how capable you feel today of accomplishing the described action:
	Q1_4A = "ese_idea"	To identify a product or service idea
	Q1_5A = "ese_devote"	To devote yourself body and soul to your project
	Q1_6A = "ese_risks"	To evaluate a project's risks
	Q1_7A = "ese_market"	To identify relevant information about markets and clients
	Q1_8A = "ese_compet"	To identify relevant information about competitors
	Q1_9A = "ese_manage"	To manage people (to coordinate and motivate other people)
	Q1_10A = "ese_bank"	To obtain bank financing
	Q1_11A = "ese_ff"	To obtain proximity financing, from your close circle
	Q1_12A = "ese_shares"	To attract equity investors
	Q1_13A = "ese_advice"	To find competent people and organisations to help and advise you
	Q1_14A = "ese_formalities"	To complete the administrative formalities linked to the creation of an organisation
	Q1_15A = "ese_people"	To find competent people to work with you
	Q1_16A = "ese_legal"	To select a legal status for your activity
	Q1_17A = "ese_plansteps"	To plan the start-up steps
	Q1_18A = "ese_finplan"	To estimate a start-up project's financial needs
	Q1_19A = "ese_present"	To present a project in a formal way (written or spoken)
Start-up intention 6 items 7-point Likert scale anchored on "Completely agree" and "Completely disagree"		Now indicate what you think of each of the following statements:
	Q1_32 = "int_all4entrep"	
	Q1_33 = "int_oneday"	I will do whatever it takes to become an entrepreneur
	Q1_34 = "int_notimelimit"	I have the firm intention of becoming an entrepreneur one day
	Q1_35 = "int_all4success"	There is no limit to how long I would give a maximum effort to establish my business
	Q1_36 = "int_mostimportant"	I will do whatever it takes to make my business a success My company start-up project is the most important activity in my life
	Q1_37 = "int_nextyear"	I have the firm intention of becoming an entrepreneur in the coming year

4.2 Exploratory factor analysis

The selection of the different items to be used for the following hypothesis testing started with an exploratory factor analysis (EFA). Specifically, one analysis was undertaken on the items representing the independent variables "attitude", "social norm" and "entrepreneurial self-efficacy" and another one was undertaken on the dependent variable "start-up intention". These are now discussed.

4.2.1 Independent Variables

The 26 items related to the independent variables "attitude", "social norm" and "entrepreneurial self-efficacy" (measured at T0) were subjected to exploratory factor analysis together in order to ensure appropriate convergent and discriminant validity. This EFA was run with the objective of simplifying the analysis which followed by reducing the number of variables involved while preserving the original information contained in the data. The recommended sample size for such factor analyses ranges from 5:1 to 10:1 observations per variable to be analysed (Hair et al., 2010). This requirement was met by this sample.

The appropriateness of the data for factor analysis was checked via the KMO Measure of Sampling adequacy (MSA above 0.70) and the Bartlett test of sphericity (significant at the 0.000 level). In addition, as recommended by Hair et al. (2010), it was verified that all individual MSAs (checked on the diagonal of the anti-image correlation matrix) were above the 0.50 threshold.

4.2.1.1 Items selection

The analysis was then undertaken using a principal component analysis (PCA), which is recommended when data reduction is the primary objective (Hair et al., 2010). When selecting factors, different criteria may be applied:

- eigenvalue: this technique posits that each retained factor should "account for the variance of at least one individual variable" (Hair et al., 2010, p.109) i.e. have an eigenvalue of at least 1.

- percentage of variance: with this approach factors are selected until a pre-determined threshold of variance accounted for by the solution is reached (Evrard et al., 2009). For social sciences, 60% may be considered satisfactory (Hair et al., 2010).

- scree test: this graphical approach consists in plotting the successive eigenvalues of the factors against their factor numbers to identify the inflexion point at which the curve becomes flat enough to consider that little incremental information is brought by the additional factor (Evrard et al., 2009).

The eigenvalue criterion, in addition to being the most commonly used method, is particularly appropriate when the number of variables is between 20 and 50 (Hair et al., 2010). It was therefore used in this research (factors with eigenvalues above 1 were retained). In addition, it was verified that the selected solution explained at least 60% of the total variance. Finally, a Varimax rotation method, recommended for data reduction (Hair et al., 2010) and for the simplification of the interpretation of the factors (Janssens et al., 2008), was used.

Factor loadings and communalities were used to decide which items to retain. Factor loadings of +/- 0.50 are generally considered a threshold for practical significance (Evrard et al., 2009; Hair et al., 2010). However, this significance is also related to sample sizes, since for larger samples lower loadings may be deemed significant. For sample sizes of 250 and 350 for example, respective loadings of 0.35 and 0.30 may be considered as a lower limit for interpretation (Hair et al., 2010). In addition, cross-loadings should also be checked and items exhibiting cross-loadings considered for deletion. Communalities,

which indicate how well an item is represented by the selected factor solution, should also be assessed with a threshold of 0.50 suggested as minimal value (Hair et al., 2010).

The application of loadings and cross-loadings limits when undertaking scale reduction varies from one researcher to the other. For example, in their original definition of an entrepreneurial self-efficacy scale, De Noble et al. (1999) retained 0.40 as both the minimum loading and the maximum cross-loading level acceptable. Kickul and D'Intino (2005) chose respectively 0.45 and 0.32 for these measures, while Chen et al. (1998) report a minimum required loading of 0.40. In this study, following Kickul and d'Intino's (2005) conservative approach, the choice was made to use different thresholds for assessing convergent and discriminant validity. In order to ensure convergent validity the minimum loading of 0.50 recommended by Hair et al. (2010) for practical significance was applied as a criterion for retaining items. In addition, discriminant validity was monitored by setting a cross-loading limit of up to 0.35 which seemed appropriate given the 325 sample size (Hair et al., 2010). Finally, it was checked that all retained items reached the 0.50 communality threshold.

As recommended for data reduction (Janssens et al., 2008; Hair et al., 2010), item selection was undertaken as an iterative process: "problematic" variables were eliminated one at a time and a new factor analysis re-run without the excluded variable until all pre-defined criteria were met. Given the way the items were formulated, all of them were expected to load in the same direction. It was therefore first checked that this condition was met. The criteria for elimination were then, in the following order, no significant loading (here understood as no loading above 0.50) and/or no cross-loading (above 0.35). When several variables presented no significant loadings and/or cross-loadings, the one with the lowest communality was eliminated first. This process was repeated until a solution was reached that was satisfactory in terms of the selected loadings and cross-loadings limits, but also in

terms of theoretical and practical interpretation of the retained factors. An example of this selection process is presented in appendix 8.

The first factor analysis undertaken with all 26 items related to independent variables returned the following characteristics:

Table 9: KMO and Bartlett's Test. IVs initial 26 items

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.832
Bartlett's Test of Sphericity	Approx. Chi-Square	1934.123
	df	325
	Sig.	0.000

Based on a criterion of an eigenvalue above 1, the initial solution returned seven factors and explained 65.549% of the variance (table 10). In this initial solution all items had communalities above 0.50.

Table 10: Total Variance Explained. IVs initial 26 items

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.567	29.104	29.104	7.567	29.104	29.104	3.856	14.829	14.829
2	2.928	11.263	40.367	2.928	11.263	40.367	3.675	14.133	28.962
3	1.791	6.887	47.254	1.791	6.887	47.254	2.870	11.037	39.999
4	1.356	5.215	52.469	1.356	5.215	52.469	2.485	9.558	49.557
5	1.260	4.847	57.316	1.260	4.847	57.316	1.584	6.093	55.651
6	1.132	4.354	61.670	1.132	4.354	61.670	1.288	4.955	60.605
7	1.009	3.879	65.549	1.009	3.879	65.549	1.285	4.944	65.549
8	0.953	3.666	69.215						
9	0.867	3.333	72.548						
10	0.822	3.160	75.709						

Extraction Method: Principal Component Analysis.

As can be seen in the initial rotated matrix presented below (table 11), all items except one loaded on their pre-supposed dimensions of attitude, social norm and entrepreneurial self-efficacy. The first "problematic" item to be eliminated was "att_disadvRC" ("Overall, being an entrepreneur would comprise more disadvantages than advantages for me") which appeared with a negative loading and grouped with some entrepreneurial self-efficacy

items related to obtaining financing. In this initial solution, the attitude item, "att_workwaiting" ("I would agree to work for someone else only long enough to implement my start-up project") appeared isolated from other items related to that dimension. In addition, some items exhibited low loadings and/or cross-loadings which suggested that the scales needed to be cleaned.

Table 11: Rotated Component Matrix. IVs initial 26 items

	Component						
	1	2	3	4	5	6	7
ese_market	0.861						
ese_risks	0.789						
ese_compet	0.775						
ese_finplan	0.593	0.507					
ese_idea	0.589						
ese_devote	0.435		0.418				
ese_formalities		0.823					
ese_plansteps	0.381	0.745					
ese_advice		0.704					
ese_legal	0.426	0.655					
ese_present	0.463	0.527					
ese_bank		0.500				-0.495	
sn_friends			0.798				
sn_mentor			0.752				
sn_fam			0.713				
sn_other			0.693				
att_own_vs_salary				0.874			
att_all_options				0.807			
att_sacrifice				0.686			
att_career_pref				0.583			
ese_manage					0.852		
ese_people		0.406			0.546		
att_work_waiting						0.699	
att_disadvRC							**-0.688**
ese_ff						-0.422	0.506
ese_shares		0.383			0.350		0.491

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 11 iterations.

The steps undertaken for purifying the scales are summarised in table 12. On each line, the KMO Measure of Sampling Adequacy, the number of factors and the percentage of

variance explained before the item removal are first given. Then, the item to be removed and the reason for its removal are described.

Table 12: Steps for purification of measurement instrument – Antecedents of intention

Step (KMO)	Number of factors and percentage of variance explained before removal	Item to be removed	Reason(s) for removal
1 (0.832)	7 factors 65.549%	att_disadvRC	Negative loading
2 (0.836)	7 factors 67.417 %	ese_devote	No significant loading and lowest communality
3 (0.828)	7 factors 68.366 %	ese_present	No significant loading and lowest communality
4 (0.815)	6 factors 64.752 %	ese_shares	No significant loading and lowest communality
5 (0.821)	6 factors 65.680 %	att_workwaiting	Negative loading
6 (0.821)	6 factors 67.606 %	ese_people	No significant loading (only item in that case)
7 (0.812)	6 factors 68.621 %	ese_advice	Cross-loading and lowest communality
8 (0.806)	6 factors 69.621 %	att_career_pref	Cross-loading and lowest communality
9 (0.803)	5 factors 65.954 %	ese_manage	No significant loading (only item in that case)
10 (0.804)	5 factors 69.000 %	ese_finplan	Cross- loading (only item in that case)
11 (0.780)	5 factors 69.446 %	None	

On the 11th step, all items had significant loadings. In fact, while 0.50 was the initially set limit, all selected items loaded above 0.60. In addition, no item suffered from cross-loadings on different factors. Finally, all items appeared well represented by the solution as all of them had communalities above 0.50 with the selected factors. This information is detailed in the next sub-section.

4.2.1.2 Retained items for the independent variables

Following this scale purification process, 16 out of the original 26 items were retained for further analysis. These items reflected five dimensions: one was related to attitude, one to

social norm and three to entrepreneurial self-efficacy. The details of the solution retained, are presented in the following paragraphs.

Table 13: KMO and Bartlett's Test. IVs final 16 items.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.780
Bartlett's Test of Sphericity	Approx. Chi-Square	1208.275
	df	120
	Sig.	0.000

The KMO measure was above 0.70 and Bartlett's test of sphericity was significant at the 0.000 level (table 13). In addition, individual measures of sampling adequacy were also checked and all were above 0.50 (appendix 9). The data were therefore appropriate for conducting factor analysis.

Table 14: Total Variance Explained. IVs final 16 items

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.799	29.992	29.992	4.799	29.992	29.992	2.666	16.660	16.660
2	2.559	15.996	45.988	2.559	15.996	45.988	2.478	15.485	32.145
3	1.607	10.045	56.033	1.607	10.045	56.033	2.279	14.247	46.391
4	1.089	6.807	62.840	1.089	6.807	62.840	2.158	13.487	59.879
5	**1.057**	**6.606**	**69.446**	**1.057**	**6.606**	**69.446**	**1.531**	**9.567**	**69.446**
6	0.776	4.849	74.295						
7	0.685	4.280	78.575						
8	0.576	3.602	82.177						
9	0.530	3.312	85.489						
10	0.496	3.099	88.587						
11	0.447	2.796	91.383						
12	0.361	2.254	93.637						
13	0.343	2.141	95.778						
14	0.281	1.758	97.536						
15	0.227	1.421	98.957						
16	0.167	1.043	100.000						

Extraction Method: Principal Component Analysis.

Eigenvalue above 1 was the threshold criterion selected for the analysis. This resulted in close to 70% of the variance for the 16 retained items being represented by this solution (table 14), which is well above the 60% level often used in social sciences (Hair et al.,

2010). In addition, all retained items reached the recommended communality level of 0.50 (table 15).

Table 15: Communalities. IVs final 16 items

	Initial	Extraction
ese_idea	1.000	0.518
ese_risks	1.000	0.678
ese_market	1.000	0.839
ese_compet	1.000	0.671
ese_bank	1.000	0.736
ese_ff	1.000	0.719
ese_formalities	1.000	0.699
ese_legal	1.000	0.699
ese_plansteps	1.000	0.822
att_own_vs_salary	1.000	0.728
att_sacrifice	1.000	0.682
att_all_options	1.000	0.769
sn_fam	1.000	0.543
sn_friends	1.000	0.685
sn_mentor	1.000	0.656
sn_other	1.000	0.667

Extraction Method: Principal Component Analysis.

Detailed loadings for the five extracted factors are shown in table 16. Conceptual bases and labelling retained for each one are the following:

- Factor 1 includes entrepreneurial self-efficacy in identifying relevant information about markets and clients, evaluating a project's risks, finding relevant information about competitors and identifying a business idea. Hence it relates to entrepreneurial self-efficacy in defining the project's strategic dimensions. It was therefore called **"Strategic entrepreneurial self-efficacy" (or strategic ESE);**

- Factor 2 comprises the four social norm items originally included in the analysis: 'perceived encouragement to start-up' x 'motivation to comply with it' with respect to close family, best friends, mentor / professional model and other important people. It was named **"Social Norm";**

- Factor 3 is made up of three items related to entrepreneurial self-efficacy. It groups the individual's entrepreneurial self-efficacy in planning the start-up steps, completing the administrative formalities associated with the creation of an organisation and selecting a legal status for the activity. It was called **"Administrative entrepreneurial self-efficacy" (or administrative ESE);**
- Factor 4 combines three out of the initial six attitude items: preference for owning one's business rather than earning a higher salary being employed, willingness to make important personal sacrifices to become an entrepreneur and preference for an entrepreneurial career among all possible options. It was named **"Attitude";**
- Factor 5 brings together two entrepreneurial self-efficacy items: entrepreneurial self-efficacy in obtaining proximity and bank financing. It refers to the financing dimension of the project and was therefore called **"Financing entrepreneurial self-efficacy" (or financing ESE).**

Table 16: Factors extracted from the 16 items representing the independent variables

Rotated Component Matrix	Component					Factor name
	1	2	3	4	5	
ese_market	0.866					Strategic ESE
ese_risks	0.769					
ese_compet	0.751					
ese_idea	0.607					
sn_friends		0.808				Social Norm
sn_other		0.797				
sn_mentor		0.793				
sn_fam		0.628				
ese_plansteps			0.833			Administrative ESE
ese_formalities			0.779			
ese_legal			0.759			
att_own_vs_salary				0.844		Attitude
att_all_options				0.817		
att_sacrifice				0.789		
ese_ff					0.815	Financing ESE
ese_bank					0.742	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 6 iterations.

4.2.2 Dependent variable

A similar analysis was undertaken on the six items included in the questionnaire to measure start-up intention. As before, KMO's measure of sampling adequacy, Bartlett's test of sphericity and individual measures of sampling adequacy were checked before undertaking the analysis. In addition, the same criteria of minimum loading of 0.50, no cross-loading above 0.35 and minimum communality 0.50 were applied.

The initial solution (based on an eigenvalue above one) confirmed a one-factor solution. However, the item "my company start-up project is the most important activity in my life" was poorly represented in this first solution as exhibited by its low level of communality (0.379). This item was therefore removed. After this, the analysis was re-run and another item ("There is no limit to how long I would give a maximum effort to establish my business") exhibited a communality level below the 0.50 threshold. It was also removed (table 17).

Table 17: Scale purification steps for dependent variable

Step (KMO)	Number of factors and percentage of variance explained before removal	Item to be removed	Reason(s) for removal
1 (0.864)	1 factor 59.266%	int_mostimportant	Communality below 0.50
2 (0.841)	1 factor 64.960 %	int_notimelimit	Communality below 0.50
3 (0.793)	1 factor 71.550%	None	

As a result, only the four remaining items were retained for the intention measure. KMO measure, Bartlett's test of sphericity (table 18) and individual MSAs (table 19) confirmed that the use of factor analysis was appropriate.

Table 18: KMO and Bartlett's Test. DV final 4 items

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.793
Bartlett's Test of Sphericity	Approx. Chi-Square	628.482
	df	6
	Sig.	0.000

Table 19: Anti image correlation matrix. DV final 4 items

Anti-image Correlation	int_all4entrep	int_oneday	int_all4success	int_nextyear
int_all4entrep	**0.751**[a]	-0.577	-0.337	-0.110
int_oneday	-0.577	**0.744**[a]	-0.182	-0.345
int_all4success	-0.337	-0.182	**0.871**[a]	-0.041
int_nextyear	-0.111	-0.345	-0.041	**0.872**[a]

a. Measures of Sampling Adequacy(MSA)

Communalities all above 0.50 suggested that the selected items were adequately represented by the selected factor (table 20).

Table 20: Communalities. DV final 4 items

	Initial	Extraction
int_all4entrep	1.000	0.812
int_oneday	1.000	0.825
int_all4success	1.000	0.639
int_nextyear	1.000	0.586

Extraction Method: Principal Component Analysis.

Total variance explained was above 70% and thus deemed good (table 21).

Table 21: Total Variance Explained. DV final 4 items

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.862	71.550	71.550	2.862	71.550	71.550
2	0.573	14.313	85.863			
3	0.370	9.238	95.101			
4	0.196	4.899	100.000			

Extraction Method: Principal Component Analysis.

Finally, all items exhibited loadings above 0.70 on the identified factor, well above the pre-determined minimum limit of 0.50 (table 22).

Table 22: Component Matrix. IV final 4 items

	Component
	1
int_oneday	0.908
int_all4entrep	0.901
int_all4success	0.799
int_nextyear	0.766

Extraction Method: Principal Component Analysis.
1 component extracted.

Having selected a series of items to represent the independent and dependent variables of the intention model, the next step consisted in assessing whether the scales formed by these items could be used for data analysis.

4.2.3 Scale assessments

For the independent variables, it was first checked that, when analysed separately, the items related to each factor returned the expected number of dimensions. For the entrepreneurial self-efficacy items, it was verified that when taken together the nine ESE items loaded on the three expected factors. For social norm and attitude unidimensionality was checked.

As these checks confirmed the expected number of dimensions for each factor, reliability analyses were conducted. The inter-item correlations and item-to-total correlations were checked against their respective recommended values of 0.30 and 0.50 (Hair et al., 2010). In addition, reliability estimates based on Cronbach's alpha were calculated for each scale. This coefficient gives an indication of the internal consistency of multi-item scales, i.e. the degree with which their elements move together (Peterson, 1994; Hair et al., 2010). Recommended minimum value for Cronbach's alpha coefficient is 0.70, though it may be lowered to 0.60 for exploratory research (Hair et al., 2010). Alpha is known to be related to the number of items included in the scale. In addition, although it can be calculated for two-item scales it does not bring a lot of extra information to the inter-item correlation (Evrard et al., 2009). In the present research, following Hair et al's (2010) recommendation, a minimum acceptable level of 0.70 was set for alpha for the five scales (four independent variables and the dependent) composed of three or more items. One measure (financing entrepreneurial self-efficacy) was represented by only two items. For this, it was checked that the inter-item correlation coefficient was above 0.30.

4.2.3.1 Attitude

The attitude scale and its respective elements met all the pre-defined requirements (table 23).

Table 23: Attitude scale. Reliability statistics

Attitude items (n = 301)	Cronbach's Alpha with the 3 items = 0.749				
	Inter-item correlation matrix			Corrected Item-total correlation	Cronbach's Alpha if Item Deleted
	1	2	3		
1. att_own_vs_salary	1.000			0.554	0.701
2. att_all_options	0.553	1.000		0.649	0.587
3. att_sacrifice	0.419	0.540	1.000	0.539	0.708

The attitude scale thus consisted of the following items:

- I would rather own my own business than earn a higher salary being employed by someone else
- Among all possible professional options, I prefer to be an entrepreneur
- I am ready to make important personal sacrifices to become an entrepreneur

4.2.3.2 Social Norm

The social norm scale also met all pre-defined criteria (table 24).

Table 24: Social norm scale. Reliability statistics

Social norm items (n = 222)	Cronbach's Alpha with the 4 items = 0.783					
	Inter-item correlation matrix				Corrected Item-total correlation	Cronbach's Alpha if Item Deleted
	1	2	3	4		
1. sn_friends	1.000				0.642	0.703
2. sn_other	0.571	1.000			0.612	0.717
3. sn_mentor	0.450	0.534	1.000		0.582	0.733
4. sn_fam	0.508	0.362	0.424	1.000	0.522	0.763

The social norm scale thus consisted of the following items:

- Encouragement expected from best friends x Importance placed on their opinion
- Encouragement expected from other people important to the person x Importance placed on their opinion
- Encouragement expected from mentor / professional model x Importance placed on their opinion
- Encouragement expected from close family x Importance placed on their opinion

4.2.3.3 Entrepreneurial self-efficacy

Both the strategic and administrative ESE scales met the requirements set at the scale level. One item of the Strategic ESE scale, ese_idea ("being able to identify a product or service idea"), fell short of reaching the 0.50 item-to-total correlation level (table 25). Removing it would actually have resulted in a slight increase in the alpha coefficient for this scale. However, given that the scale's alpha coefficient with the item was high (above 0.80) and that the item was conceptually related to the other items, the choice was made to keep it.

Table 25: Strategic ESE scale. Reliability statistics

	Cronbach's Alpha with the 4 items = 0.823					
	Inter-item correlation matrix				Corrected Item-total correlation	Cronbach's Alpha if Item Deleted
Strategic ESE items (n = 289)	1	2	3	4		
1. ese_market	1.000				0.779	0.712
2. ese_risks	0.697	1.000			0.688	0.757
3. ese_compet	0.741	0.552	1.000		0.674	0.764
4. ese_idea	0.413	0.438	0.361	1.000	**0.458**	0.856

The strategic entrepreneurial self-efficacy scale thus consisted of the items assessing the person's self-assessed ability to:

- Identify relevant information about markets and clients
- Evaluate a project's risks
- Identify relevant information about competitors
- Identify a product or service idea

For the administrative entrepreneurial self-efficacy scale, all pre-set requirements were met (table 26).

Table 26: Administrative ESE scale. Reliability Statistics

	Cronbach's Alpha with the 3 items = 0.788				
	Inter-item correlation matrix			Corrected Item-total correlation	Cronbach's Alpha if Item Deleted
Administrative ESE items (n = 295)	1	2	3		
1. ese_plansteps	1.000			0.740	0.597
2. ese_formalities	0.539	1.000		0.522	0.818
3. ese_legal	0.701	0.433	1.000	0.648	0.700

The administrative entrepreneurial self-efficacy scale thus consisted of the items assessing the person's self-assessed ability to:

- Plan the start-up steps
- Complete the administrative formalities linked to the creation of an organisation
- Select a legal status for their activity

The last scale, financing ESE, was made up of two items. Given this fact, rather than alpha (which fell below 0.60) the inter-item correlation coefficient was used to decide whether the two items could be used in the same scale. As this coefficient was above 0.30, it was deemed low but appropriate for inclusion in the following analyses (table 27).

Table 27: Financing ESE scale. Reliability Statistics

	Cronbach's Alpha with the 2 items = 0.535	
	Inter-item correlation matrix	
Financing ESE items (n = 273)	1	2
1. ese_ff	1.000	
2. ese_bank	0.374	1.000

The financing entrepreneurial self-efficacy scale thus consisted of the items assessing the person's self-assessed ability to:

- Obtain proximity financing, from their close circle
- Obtain bank financing

Another test was conducted to assess the validity of these ESE scales. The questionnaire included one item measuring "Global entrepreneurial self-efficacy" for which respondents were asked to position themselves on a seven-point Likert scale anchored on "not capable at all" and "completely capable" with regard to the following question: "Today, how do you rate your ability to create your company? You feel ... of doing it".

Following the approach used by Boissin et al. (2009b), it was verified that the three identified dimensions were indeed related to the global ESE scale by regressing "global

ESE" on the three sub-dimensions. Boissin et al. (2009b) had found that 25.8% of the variance in global entrepreneurial self-efficacy could be explained by four sub-dimensions which they had identified in their analysis.

In the current analysis, it was first verified that the underlying assumptions of regression analysis concerning the linearity of the phenomenon, homoscedasticity and normal distribution of the residuals were met (Cohen et al., 2003). The initial regression analysis led to the identification of two outliers in terms of low global ESE with respect to their scores on each sub-dimension. The choice was made to report results without these cases. As suggested by Hair et al. (2010), analyses were conducted with and without these cases. These showed that the removal of the cases resulted in a higher adjusted R^2 (0.374 vs. 0.346) but lead to identical conclusions for the overall model.

Before presenting the results from the regression analysis (tables 29 and 30), means and standard deviations of the variables together with correlations between them are presented (table 28). In terms of effect size of correlation coefficients, Cohen (1992) offers that values of 0.10, 0.30 and 0.50 can respectively be considered as small, medium and large. It can be seen in table 28 that individual ESE dimensions exhibit medium-high (all above 0.40) significant positive correlations with global ESE.

Table 28: Means, Standard Deviations and Pearson correlations. Self-efficacy variables

	Mean	SD	1	2	3	4
1. Strategic entrepreneurial self-efficacy	5.2615	1.0698	1.000			
2. Administrative entrepreneurial self-efficacy	4.5708	1.3529	0.532***	1.000		
3. Financing entrepreneurial self-efficacy	4.5708	1.3665	0.466***	0.436***	1.000	
4. Global entrepreneurial self-efficacy	5.24	1.390	0.556***	0.485***	0.438***	1.000

All correlations significant at the 0.000 level.
Listwise n = 240

Table 29: Model Summary. Global ESE vs. ESE dimensions

	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
ESE Model	0.618	0.382	0.374	1.100	0.382	48.621	3	236	0.000

Predictors: (Constant), FIN_ESE, ADMIN_ESE, STRAT_ESE

Dependent Variable: Global ESE

Table 30: Regression coefficients. Global ESE vs. ESE dimensions

ESE Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.951	0.370		2.573	0.011		
Strategic ESE	0.465	0.083	0.358	5.632	0.000	0.650	1.539
Administrative ESE	0.224	0.064	0.218	3.497	0.001	0.672	1.489
Financing ESE	0.179	0.061	0.176	2.952	0.003	0.734	1.363

Dependent Variable: Global ESE

Cohen et al. (2003) provide a rule of thumb to assess the effect size (ES) of a coefficient of determination. This rule provides indicative values for R^2 effect sizes to be considered small, medium and large are respectively 0.02, 0.13 and 0.26 (Cohen et al., 2003, p.93). In the above example the adjusted R^2 is 0.374 and can therefore be considered as high, thus confirming the validity of the entrepreneurial self-efficacy sub-dimensions.

4.2.3.4 Intention

Finally, the reliability analysis was undertaken for the dependent variable "Intention". That scale showed a 0.848 alpha coefficient and individual items met the pre-discussed criteria of minimum inter-item and item-to-total respective correlations of 0.30 and 0.50 (table 31).

Table 31: Intention scale. Reliability Statistics

Intention items (n = 298)	Cronbach's Alpha with the 4 items = 0.848					
	Inter-item correlation matrix				Corrected Item-total correlation	Cronbach's Alpha if Item Deleted
	1	2	3	4		
1. int_oneday	1.000				0.809	0.754
2. int_all4entrep	0.796	1.000			0.782	0.768
3. int_all4success	0.618	0.656	1.000		0.636	0.837
4. int_nextyear	0.626	0.561	0.439	1.000	0.616	0.867

The intention scale was therefore made up of the items:

- I have the firm intention of becoming an entrepreneur one day
- I will do whatever it takes to become an entrepreneur
- I will do whatever it takes to make my business a success
- I have the firm intention of becoming an entrepreneur in the coming year

Before turning to the data analyses in Chapter 5 which were based on the above scales, each of them is discussed qualitatively in the following section in order to contribute to the ongoing discussion regarding the operationalisation of these constructs.

4.3 Discussion concerning the elaboration of the intention model scales

The results of the instrument purification undertaken here suggest that there remains significant room for improvement in the operationalisation of the different constructs related to intention-models elements used in entrepreneurship literature. In this section, a brief discussion regarding each of the selected scales is provided together with suggestions for further improving their design.

4.3.1 Attitude

Six items were originally selected to represent the attitude scale and three were ultimately retained. The first item eliminated had been adapted (reverse coded) from Linan and Santos (2007): "Overall, being an entrepreneur would comprise **more disadvantages** than advantages for me" (Linan, 2008a). This item originally loaded on a factor grouping it with ESE in finding proximity financing and attracting shareholders. It did however load negatively relative to these two other items. No substantive justification could be found for this as all items were coded in such a way that they were expected to load in the same direction. One possible explanation was that the reverse coding included in the questionnaire may have confused the respondents. In addition, the fact that this item was grouped with two financing-related items could also indicate that the meaning attributed by

the respondents to disadvantages / advantages may be primarily linked to pecuniary aspects, when it was meant by the researchers as encompassing broader aspects (such as autonomy or self-realisation for example). A more explicit phrasing describing the considered aspects (i.e. professional, personal and financial considerations) might have been more appropriate.

The second item removed was one adapted from Gundry and Welsch (2001): "I would agree to work for someone else only long enough to implement my start-up project". That item was eliminated at the fifth step of the purification process as it also exhibited a negative loading on a factor including two other items (proximity and bank financing aspects). Kolvereid and Isaksen (2006) had also ended up removing this item from their attitude scale, though they invoked scale reliability reasons for doing so (it improved the Cronbach's alpha of their scale). Hence this item may need to be adapted if it is included in future studies.

Finally, the item "I would rather own my own business than pursue another promising career" had to be removed because it exhibited cross-loading between an attitude-related factor (including the three other remaining attitude items) and another one including ESE in managing people. It seems difficult to modify this item but the clarification of other questionnaire items suggested in this section may contribute to improving its representation, so future studies should test it again.

While the retained "attitude" scale presented good properties, the above discussion shows that it could be improved, especially by reviewing the phrasing of the first item eliminated.

4.3.2 Social norm

The social norm elements appeared to be less problematic. They stuck together on a common factor throughout the factor analysis and exhibited loadings meeting the pre-defined criteria.

One word of caution should however be given with regard to these four items. The item related to the professional mentor was the one exhibiting the highest non-response rate (27% of the initial 325 responses) of all intention-based questionnaire items. This problem had been identified by one of the CCI counselors in her feedback regarding a first draft of the questionnaire. She had suggested that not all respondents may feel they have a "mentor". As a result, the phrasing had been chosen as more explicitly specifying mentor / professional model. Pre-tests did not indicate any problem with this item, but the relatively high non-response suggests otherwise. In addition, the social norm item "other people important to you" that was placed after the mentor item seems to have been contaminated by this non-response as it also had a high percentage of missing data (21%). This may have been caused by the fact that respondents saw mentors as "important others" thus making the question confusing to them.

For future studies addressing working adults, the rephrasing or elimination of the professional mentor item would therefore need to be reconsidered in order to limit such non-response problems.

4.3.3 Entrepreneurial self-efficacy

The original items selected to measure ESE came from a list developed for use in a French context (Boissin et al., 2004). The choice of this list was guided by the fact that it included items directly related to the nascent venturing stage. It was supplemented by two items suggested by CCI counselors.

The first item eliminated was the one related to devoting oneself "body and soul" to one's project. In their initial analysis undertaken with students Boissin et al. (2004) had found that this item grouped with ESE in identifying an idea and they suggested that it was related to personal engagement in the project. The same authors however later recognised the ambiguity of this two-item factor as highlighted by their analysis (Emin et al., 2005). In

this analysis it was eliminated due to its lack of a strong enough loading on any factor. Though its highest "affinity" appeared to be with items related to strategic ESE, it also shared some with the social norm items and, before its removal at the second step of the purification process, with some items related to financing ESE. Hence this item may need to be reworded or eliminated from future analyses.

ESE in presenting a project in a formal way was the next item eliminated and its removal was due to its lack of significant loading. In fact the item loaded almost equally (close to 0.45) on two ESE factors, one strategy-related and the other administrative-related. That item had been added following a suggestion by one of the counselors but it may need to be made more explicit by specifying for example to whom the project ought to be presented (clients or bankers, for example).

ESE in attracting equity investors was next on the list for elimination. Before its removal, it was loading on the same factor as obtaining bank and proximity financing. However, its loading was not high enough to be retained. It should be remembered that the projects considered here were usually projects requiring limited external equity financing. Hence the notion of outside equity investors may not be relevant to all of these projects. To illustrate this, consider the answers of the respondents concerning the amount of financing they expected to require for their project, whether they expected to use external financing and if so, which sources they were considering tapping (all measured at T0). While only 171 out of the 325 respondents provided this information, their answers illustrate financial issues specific to the projects considered here. Close to a third of the projects were projects estimated to require less than €8,000 and more than 50% less than €16,000 of initial investment. However, some respondents also felt that their projects would require €80,000 or more (table 32). These included projects such as opening restaurants, shops or creating sport centres.

Table 32: Estimated initial investment required

Estimated initial investment required	€0 to < 4K	€4K to < 8K	€8K to < 16K	€16K to < 40K	€40K to 80K	€80K or more
Number	26	29	38	27	21	30
% (n = 171)	15.2%	17.0%	22.2%	15.8%	12.3%	17.5%

Participants were also asked to indicate whether they intended to use external financing source(s): 53 (20.5%) answered no, 125 (48.3%) yes and 81 (31.2%) that they did not know. In addition, of the 125 who were considering using external financing, 109 provided 157 detailed answers to which source(s) they had in mind (open question with multiple answers possible). These answers were coded in the following categories: bank financing, general state or local government aid (including subsidies), state aid dedicated to unemployed people, friends and family and other (which included, for example, sponsoring for some sport complexes or former employer for some people who had access to such financing as part of a severance package). This latter category also included one person who indicated "shareholding" and another "investor" as possible outside sources. What is striking is that 91 of the 109 respondents (83.5%) included bank financing in their response (table 33). In addition, state or local government help came ahead of friends and family as possible external sources.

Table 33: External sources of financing considered

Type of external financing considered	Bank financing	General state or local government aid	Friends and family	Other	State aid targeted to unemployed people
Number of replies	91	25	18	12	11
% (n=109*)	83.5%	22.9%	16.5%	11.0%	10.1%

(*) Multiple answers possible, total superior to 100%

Altogether, these answers suggest that for this type of aspiring company founders the capacity of attracting shareholders or 'potential investors' (phrasing used by De Noble et al., 1999) may not be a relevant component of ESE.

Next, ESE in finding competent people to work with oneself appeared to be split between two factors: one associated with human resources that grouped it with ESE in managing people and the other related to administrative ESE. It could be that its wording may not have been clear enough for respondents. "Recruiting" or "hiring" may for example have been more explicit than "finding" competent people to work with oneself. ESE in managing people also had to be removed during the selection process due to lack of significant loading. Hence the human resource dimension was not apparent in the ESE dimensions retained. The number of employees that the project carriers envisage for their projects sheds some light as to why the absence of this dimension was not considered prohibitive for the current study. Answers to the question "How full-time many jobs (including yours) do you think the activity will have at start-up?" (measured at T0) are reported in table 34. Some people indicated imprecise numbers such as "1 or 2" or "2 or 3", these were coded as the average of the 2 responses i.e. respectively 1.5 and 2.5 in these examples.

Table 34: Contemplated number of full-time jobs at start-up

Number of full-time jobs at start-up including the founder's	**1 or less**	**< 1 to 2**	**< 2 to 3**	**< 3 to 4**	**< 4 to 5**	**< 5 to 10**
Or Number of employees	**No employee**	**0 to 1 full-time employee**	**< 1 to 2 full-time employees**	**< 2 to 3 full-time employees**	**< 3 to 4 full-time employees**	**< 4 to 9 full-time employees**
Answers	154	49	17	8	3	7
% (n = 238)	64.7%	20.6%	7.1%	3.4%	1.3%	2.9%

The absence of human resource management in the selected ESE dimensions could be seen as a weakness resulting from the selection process conducted. However, the fact that over 85% of the respondents to the question regarding the number of envisaged full-time jobs at start-up considered it to be a maximum of one employee illustrates that this issue is probably not the most pressing for this type of sample.

ESE in finding people to help and advise oneself is another item that suffered from cross-loading. Though it was primarily associated with administrative ESE (0.685 loading), it also seemed to be in part related to the financing dimension the project (0.385 cross-loading) and hence had to be deleted. Specifying the type of advice (for example strategic, financial or administrative) could have removed that ambiguity.

Finally, the item related to ESE in estimating a start-up project's financial needs also had to be removed due to cross-loadings concerns. Specifically, it loaded significantly on both the administrative ESE factor (0.587) and the strategic ESE factor (0.551).

In the first questionnaire, next to being asked how capable they felt **of** undertaking each individual task listed, respondents were asked whether they felt this task was necessary or not for the successful completion of their start-up project. Their answers to this question (table 35) also provide possible leads for improvements in ESE scales targeted at nascent entrepreneurs.

About a quarter of the individuals surveyed here did not perceive managing human resources as a critical task for them to master. In addition, with regards to the funding aspects of the projects, the predominance of bank financing was also apparent. For the two other items (proximity and shareholders financing) more than half of the respondents did not consider them necessary. In addition, these two items were the ones that suffered from the highest non-response rate on the ESE seven-point Likert scale (14.8% and 19.4% respectively). The finding that "only" 80% of the participants considered obtaining bank financing as necessary (as compared to above 90% for some other tasks) should be related to the fact that at the time of this first survey more than half of the people who answered the question regarding the planned used of external financing with either "no" or "does not know". These remarks may also contribute to explaining the medium (based on Cohen's (1992) assessment of effect sizes) correlation coefficient obtained for the two items selected to represent financing ESE.

Table 35: Tasks considered necessary by nascent entrepreneurs

	Valid n	Yes, necessary	No, not necessary
To plan the start-up steps	288	99.0%	1.0%
To evaluate a project's risks	289	98.3%	1.7%
To find competent people and organisations to help and advise you	293	97.6%	2.4%
To complete the administrative formalities linked to the creation of an organisation	289	97.2%	2.8%
To select a legal status for your activity	287	97.2%	2.8%
To estimate a start-up project's financial needs	288	96.9%	3.1%
To identify relevant information about the markets and the clients	283	96.5%	3.5%
To identify a product or service idea	289	94.8%	5.2%
To devote yourself body and soul to your project	284	93.3%	6.7%
To identify relevant information about competitors	288	92.0%	8.0%
To present a project in a formal way (written or spoken)	283	91.2%	8.8%
To obtain bank financing	288	80.2%	19.8%
To manage people (to coordinate and motivate other people)	285	75.4%	**24.6%**
To find competent people to work with you	280	73.9%	**26.1%**
To obtain proximity financing, from your close circle	279	40.5%	**59.5%**
To attract equity investors	286	21.0%	**79.0%**

Overall, the above observations concerning ESE items that were eliminated during the instrument purification process suggest that there is still room for improvement in designing entrepreneurial self-efficacy scales adapted to the type of project carriers included in this study, i.e. people primarily look to create their own job and conducting projects that could in the vast majority be classified in Samuelsson's (2004) 'reproducing' rather than 'innovative' category. In this context, one can only concur with Bird and Schjoedt's (2009, p.350) suggestion that the need remains to "develop our own agreed-upon set of core behaviours and from this develop psychometrically sound empirical tools".

4.3.4 Intention

The six items initially selected for representing the dependent variable also had to be sorted out. Specifically, the items "There is no limit to how long I would give a maximum effort to establish my business" and "My company start-up project is the most important activity

in my life" were removed. These two items could possibly be seen as related to the importance that the project occupies in the respondent's life rather than actual intention (Delanoë and Brulhart, forthcoming). According to the results of the factor analysis however, the first one ("no time limit") appeared more closely associated with intention than the second ("most important activity in my life").

4.3.5 Description of the scales representing intention model elements

Each of the identified scales resulted in a variable to be used for subsequent analysis and hypothesis testing. A description of each scale is provided in table 36. As can be seen from the skewness and kurtosis information, some of these data appear to be somewhat different from normally distributed data, especially in terms of their negative skewness. The descriptive statistics provided in several intention-based entrepreneurship research articles suggest that this is not uncommon for such studies. The implication is that the tests used to conduct the hypothesis testing had to be able to accommodate such distributions (discussed in the following chapters).

4.4 Summary of Chapter 4

In this chapter, the steps undertaken to design the scales used for the subsequent data analyses have been described. In particular, it was shown how different items were selected to represent the independent variables (attitude, social norm and entrepreneurial self-efficacy) and the dependent variable (intention) of the intention-based portion of the model. The reliabilities of the resulting scales were then presented. Finally, each scale was discussed in a more qualitative fashion in order to provide explanations for the dimensions selected and indicate possible areas for future improvements for their use in the context of small, reproducing-type projects.

Table 36: Summary of intention-related scales

	Items composing the scale	Mean	Std dev.	Min.	Max.	Skewness	Kurtosis
Attitude **(n = 301)** **(α = 0.749)**	I would rather own my own business than earn a higher salary being employed by someone else I am ready to make important personal sacrifices to become an entrepreneur Among all possible professional options, I prefer to be an entrepreneur	5.3300	1.27903	1.00	7.00	-0.953 (0.140)	0.935 (0.280)
Social Norm **(n = 222)** **(α = 0.783)**	"Encouragement expected from _____" x "Importance placed on their opinion" close family best friends mentor / professional model other people important to the person	30.0349	10.78671	4.25	49.00	-0.003 (0.163)	-0.687 (0.325)
Strategic ESE **(n = 289)** **(α = 0.823)**	Identify a product or service idea Evaluate a project's risks Identify relevant information about markets and clients Identify relevant information about competitors	5.2353	1.08653	1.50	7.00	-0.645 (0.143)	0.515 (0.286)
Administrative ESE **(n = 295)** **(α = 0.788)**	Complete the administrative formalities linked to the creation of an organisation Select a legal status for their activity Plan the start-up steps	4.5356	1.32486	1.00	7.00	-0.284 (0.142)	-0.496 (0.283)
Financing ESE **(n = 273)** **(r = 0.374)**	Obtain bank financing Obtain proximity financing, from their close circle	4.5568	1.33377	1.00	7.00	-0.271 (0.147)	-0.460 (0.294)
Intention **(n = 298)** **(α = 0.848)**	I will do whatever it takes to become an entrepreneur I have the firm intention of becoming an entrepreneur one day I will do whatever it takes to make my business a success I have the firm intention of becoming an entrepreneur in the coming year	6.1191	1.04349	1.00	7.00	-1.648 (0.141)	3.485 (0.281)

Numbers in parentheses indicate standard errors

In the next chapter, the first research question is analysed. Different series of hypotheses are tested in order to investigate which aspects of the human capital, social capital and intention model elements can be identified as influencing the one-year outcome at the project level: started or withdrawn.

5. Research question 1: analysis at the project level

This chapter is dedicated to the tests related to the first research question (RQ1): **What factors determine whether a nascent project gets realised?** The conceptual model designed for answering this research question is Model A which was presented on page 106. The chapter has seven sections. In the first, the data analysis methods selected for answering this research question are presented. The next four are each dedicated to one of the investigative questions which are components of RQ1. The sixth section presents the discussion of the results and the seventh the summary of the chapter.

5.1 Choice of data analysis methods

Multiple regression analysis is a dependence technique that is appropriate when one is trying to relate changes in a single dependent variable to changes in one or more independent variables. Specifically, linear regression analysis is the suitable method when the dependent variable is metric, while logistic regression analysis is for binary dependent variables (Hair et al., 2010). Consequently, the tests related to investigative questions 1.1 and 1.2 (respective dependent variables: antecedents of intention and intention, which were based on seven-point Likert scales) were conducted using linear regression analysis and those related to investigative questions 1.3 and 1.4 (dependent variable: start-up outcome, which could be either started or withdrawn) using binary logistic regression analysis.

In addition, hierarchical (or sequential) regression analysis was used for the analyses related to investigative questions 1.2 to 1.4. In this method, variables or sets thereof are entered sequentially in order to test their incremental effects one after the other (Cohen et al., 2003). Listwise deletion was used for missing data in order to provide a comparable basis for the models related to each investigative question. In other words, only complete cases with no missing data were used for each analysis.

The minimum number of cases per independent variable for linear regression analysis is 5:1, though it is preferable to reach ratios of 15 to 20:1 (Hair et al., 2010). Hair et al. emphasise that sample requirements are more stringent for binary logistic regressions, for which each outcome group should comprise at least 10 cases per predictor (Hair et al., 2010). All but one linear regression run in the next sections met the minimum sample size recommendations. Model 2, relating social norm to human and social capital, had a ratio of 14.9:1. It was considered that this was close enough for this analysis to be presented. In addition, models 26, 28 and 33 which were based on logistic regression analysis had respective ratios of 9.5:1, 8.4:1 and 9.3:1 cases per predictor and per category. The choice was also made to present these regression models while keeping in mind that they should be interpreted with caution (Vittinghoff and McCulloch, 2007). All other binary logistic regressions were above the 10:1 threshold.

Assumptions for using linear regression analysis include the correct specification of the form of the relationship (linear), a correct specification of the model (selection of the independent variables), absence of measurement error (reliability), constant variance of residuals (homoscedasticity), independence of the residuals and normality of the residuals (Cohen et al., 2003). The relationships were checked visually by plotting the metric independent variables against the dependent variable intention. The model specification was theoretically-driven and undertaken in steps (hierarchical regression analysis). The reliability of the measures used was described in chapter four. The presence of heteroscedasticity and that of non-normality of the residuals does not bias the regression estimates but may impact the confidence intervals for the coefficients and hence the test's results (Cohen et al., 2003). In practice however these issues are problematic for either large degrees of heteroscedasticity or small samples for non-normality of the residuals (Cohen et al., 2003). The absence of such problems was checked by examining the regression residuals.

Multicollinearity or excessive correlation among the independent variables can also be problematic as it may affect the regression coefficients, their interpretation or the regression's overall R^2 (Hair et al., 2010). The selection of independent variables presenting acceptable degrees of discriminant validity (chapter four) was one element contributing to the absence of such multicollinearity. In addition, for the various regression models considered, it was ensured that variance inflation factors remained below three (Hair et al., 2010). Furthermore, as outliers may impact regression analysis results (Hair et al., 2010), the presence of such observations was checked by flagging observations with standardised residuals outside of the -3/+3 range. In regression models where such observations were identified, the decision taken is discussed together with the presentation of the results.

Four controls identified in the literature review were systematically included: the project's advancement at T0, age, gender and employment status (table 37).

Table 37: Questionnaire items for control variables

Control variables		***Questionnaire or (CCI sheet)***
Gender	Dichotomous: Male = 0 / Female = 1	Q1_60 "gender" (CCI)
Age	Age at T0	Q1_62 (CCI)
Advancement at T0	Project's advancement at time of initial information meeting as measured by count of gestation behaviours	Q1_38A to J and Q1_38L to P
Employment status	Dichotomous: Not active (unemployed, students, retired, not in the market) = 0 / Active = 1	Q1_61 (CCI)

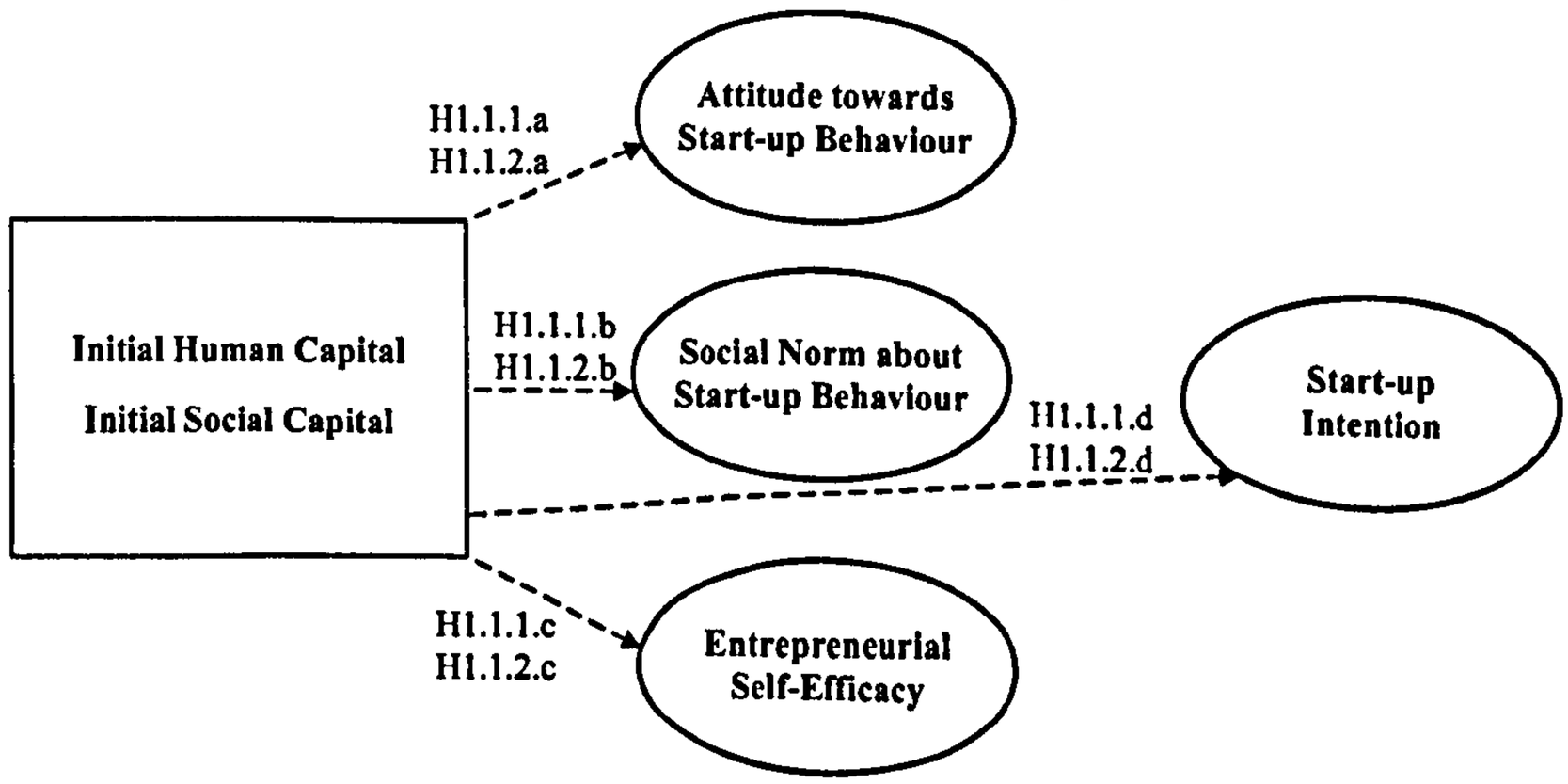
The above elements applied to the different regression models described in the following sub-sections. The analysis starts by investigating the relationship between human and social capital variables and the different constituents of the intention model.

5.2 Investigative question 1.1: What is the impact of human and social capital on the entrepreneurial intention model elements?

As discussed in the literature review, human capital and social capital analyses related to nascent entrepreneurship tend to be separated from intention-based analyses. However, many intention-based investigations include human or social capital variables as controls. Kolvereid (1996b) specifically found variables which he called demographic (self-employment experience and entrepreneurial family background) to influence entrepreneurial intention indirectly via their impact on its antecedents identified in the theory of planned behaviour. In addition, it was suggested that human capital enhances a person's propensity to engage in nascent entrepreneurial activity and that social capital positively impacts the chances of becoming an entrepreneur and advancing one's project (Davidsson and Honig, 2003; De Clercq and Arenius, 2006). Still the impact of the relative constituents of these human and social forms of capital were sometimes found to be less than clear-cut (Kim et al., 2006; Friga, 2008) and this impact may vary according to the stage at which the project is (Davidsson and Honig, 2003; Greve and Salaff, 2003).

In this first analysis, the effect of four human capital variables (proposition 1.1.1.) and three social capital variables (proposition 1.1.2.) on each antecedent of intention and on intention itself was tested (figure 23).

Figure 23: Partial model for investigative question 1.1



- **Proposition 1.1.1:** the greater the initial human capital, the higher or more favourable is the initial (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention.

  - **Hypothesis 1.1.1.a**: there is a significant positive relationship between initial human capital and attitude towards start-up behaviour.

  - **Hypothesis 1.1.1.b**: there is a significant positive relationship between initial human capital and social norm about start-up behaviour.

  - **Hypothesis 1.1.1.c**: there is a significant positive relationship between initial human capital and entrepreneurial self-efficacy.

  - **Hypothesis 1.1.1.d**: there is a significant positive relationship between initial human capital and start-up intention.

- **Proposition 1.1.2**: the greater the initial social capital, the higher or more favourable is the initial (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention.

  - **Hypothesis 1.1.2.a**: there is a significant positive relationship between initial social capital and attitude towards start-up behaviour.

  - **Hypothesis 1.1.2.b**: there is a significant positive relationship between initial social capital and social norm about start-up behaviour.

  - **Hypothesis 1.1.2.c**: there is a significant positive relationship between initial social capital and entrepreneurial self-efficacy.

  - **Hypothesis 1.1.2.d**: there is a significant positive relationship between initial social capital and start-up intention.

In order to test the hypotheses, a differentiation was made between general and entrepreneurship-specific human capital and between informal and formal sources of social capital. The human capital and social capital variables included in this analysis and their operationalisation are listed in table 38 below together with their corresponding questionnaire item numbers.

Table 38: Human capital and social capital questionnaire items

Variable name	*Operationalisation*	*Level of measurement*	*Questionnaire Item #*
General human capital			
Education	Education level	Dichotomous: Below Bac+2 = 0 / Bac+2 and above = 1	Q1_64
Work experience	Length of work experience	Dichotomous: Up to 10 years = 0 / more than 10 years = 1	Q1_54
Entrepreneurship-specific human capital			
Previous start-up project	Participation in a previous start-up project	Dichotomous: No = 0 / Yes = 1	Q1_52
Prior start-up training	Having received start-up training prior to attending the information session	Dichotomous: No = 0 / Yes = 1	Q1_38K
Informal social capital			
Entrepreneurial parents	Father, or mother, or both entrepreneurs	Dichotomous: No = 0 / Yes = 1	Q1_50
Entrepreneurial friends	Presence of friends entrepreneurs	Dichotomous: No = 0 / Yes = 1	Q1_51A
Formal social capital			
Professional network membership	Membership in a professional network	Dichotomous: No = 0 / Yes = 1	Q1_39

The relationships between these different human and social capital variables and the intention model elements were tested via a series of linear regression models. Specifically, each intention model element was regressed against the above human and social capital variables. Three outliers were identified for the attitude regression and two for each the global ESE and intention regressions. The choice was made to exclude them as a closer analysis suggested that they represented what Hair et al. (2010, p.196) call "extraordinary situations". For example, one woman indicated that she was definitely not planning to start in the coming year but rather later and hence reported a very low intention level relative to her other responses.

The models related to these tests are presented in table 39 and a summary of their interpretation is provided in table 40 (details of the regression outputs including collinearity statistics are given in appendix 10). This initial analysis suggested that, as contended by Kolvereid (1996b), the effect of human and social capital seemed to be more pronounced on the antecedents of intention than on intention itself.

Of all the variables tested, only the education level appeared to be directly and negatively related to intention. The other variables had either no statistically significant relationship with any of the model elements (previous start-up project and presence of entrepreneurial parents) or only statistically significant effects on some of the pre-supposed antecedents of intention (length of work experience, prior start-up training, presence of entrepreneurial friends and professional network membership). In addition, three control variables were found to be directly related to intention: Project's advancement at time 0 was related positively, age and an active employment status were related negatively.

Table 39: Linear regression analyses. Intention model elements vs. human and social capital

DVs = Individual intention model variables / IVs = Human and Social capital variables

Dependent Variable (Beta coefficients reported)	Model 1 Attitude	Model 2 Social Norm	Model 3 Global ESE	Model 4 Strategic ESE	Model 5 Administrative ESE	Model 6 Financing ESE	Model 7 Intention
Controls							
Advancement at T0	0.093	0.055	0.282***	0.251**	0.346***	0.310***	0.367***
Age	-0.265**	-0.110	-0.088	-0.208*	-0.175†	-0.122	-0.268**
Gender (1 = female)	0.097	0.040	-0.074	-0.151*	-0.051	-0.108	0.051
Employment status (1 = active)	0.031	-0.123	-0.042	0.009	-0.039	-0.136†	-0.127†
Human capital variables							
Education level	-0.286***	-0.011	-0.126†	-0.009	-0.109	-0.068	-0.164*
Length of work experience	0.323**	-0.038	0.041	0.099	0.177†	0.013	0.147
Previous start-up project	0.055	-0.012	0.007	0.049	-0.026	-0.016	-0.019
Prior start-up training	0.028	-0.064	0.115†	0.028	0.033	-0.048	0.089
Social capital variables							
Entrepreneurial parents	0.050	0.022	0.044	0.044	0.017	0.044	0.011
Entrepreneurial friends	0.021	0.143†	0.074	0.054	0.083	0.128†	0.013
Professional network membership	0.135†	0.015	0.097	0.062	-0.089	0.001	0.013
Adjusted R^2	0.133	-0.012	0.128	0.104	0.128	0.103	0.174
Model's significance: F-value (sig.)	3.805 (0.000)	.823 (0.617)	3.783 (0.000)	3.100 (0.001)	3.721 (0.000)	2.942 (0.001)	4.875 (0.000)
n	203	164	209	201	204	187	203

*** sig.= 0.000 ; ** sig.≤0.01 ; * sig.≤0.05; † sig.≤0.10

Table 40: Summary of results intention model elements vs. human and social capital

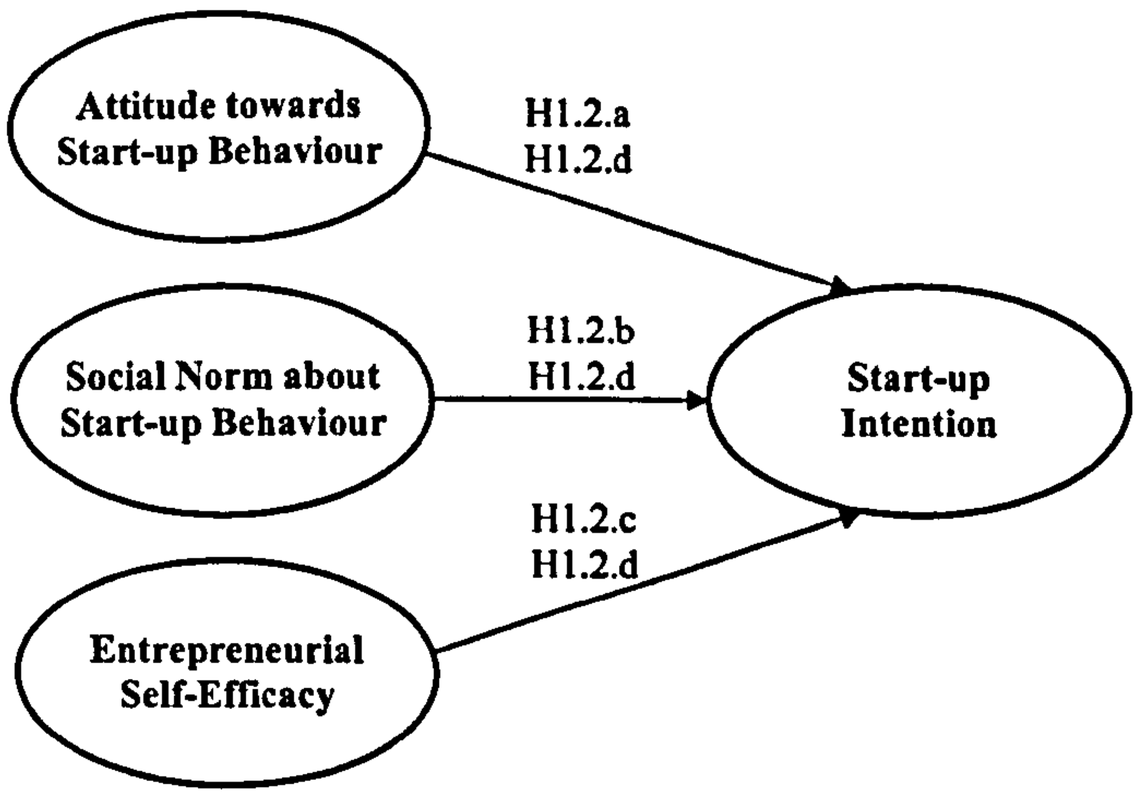
Hypothesis number (Model)	Independent variables considered	Dependent variable	Results
1.1.1.a (Model 1)	Human capital	Attitude	Mixed for general human capital: negative for education level and positive for length of work experience. Not supported for entrepreneurship specific human capital.
1.1.1.b (Model 2)	Human capital	Social Norm	Not supported.
1.1.1.c (Models 3 to 6)	Human capital	Entrepreneurial self-efficacy (ESE)	Mixed for general human capital. Weakly (significance level = 0.1) negative for education on global ESE and weakly (significance level = 0.1) positive for length of work experience on administrative ESE. No significant relationship detected with strategic and financing ESE. Weakly (significance level = 0.1) positive for prior start-up training on global ESE
1.1.1.d (Model 7)	Human capital	Intention	Negative for education level. Not supported for entrepreneurship specific human capital.
1.1.2.a (Model 1)	Social capital	Attitude	Not supported for informal social capital. Weakly (significance level = 0.1) positive for formal social capital in the form of membership of a professional network.
1.1.2.b (Model 2)	Social capital	Social Norm	Weakly (significance level = 0.1) positive relationship detected with for informal social capital in the form of entrepreneurial friends. Not supported for formal social capital.
1.1.2.c (Models 3 to 6)	Social capital	Entrepreneurial self-efficacy (ESE)	Weakly (significance level = 0.1) positive relationship detected for informal social capital in the form of entrepreneurial friends with respect to financing ESE. No significant relationship detected with global, strategic and administrative ESE. Not supported for formal social capital.
1.1.2.d (Model 7)	Social capital	Intention	Not supported: no significant relationship detected.

The next step of the analysis turned to the core of the intention model itself by investigating the relationship between the theoretically supposed antecedents of intention and intention itself.

5.3 Investigative Question 1.2: What are the determinants of nascent entrepreneurs' start-up intention?

In line with the theory, one proposition was made concerning the possible antecedents of start-up intention (figure 24). It was separated into four testable hypotheses, three related to each antecedent taken individually and the fourth bringing all pre-supposed antecedents together.

Figure 24: Partial model for investigative question 1.2



- **Proposition 1.2:** the higher or more favourable the initial (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy, the stronger is the initial start-up intention.

  - **Hypothesis 1.2.a**: There is a significant positive relationship between attitude towards start-up behaviour and start-up intention.
  - **Hypothesis 1.2.b**: There is a significant positive relationship between social norm about start-up behaviour and start-up intention.

- **Hypothesis 1.2.c**: There is a significant positive relationship between entrepreneurial self-efficacy and start-up intention.
- **Hypothesis 1.2.d**: There is a significant positive relationship between attitude, social norm and entrepreneurial self-efficacy and start-up intention.

The project's advancement at the time of the initial survey, age, gender and employment status were kept as controls. In addition, given that education level was previously (section 5.2) identified as having a direct impact on intention it was also included as a control in this analysis.

Two analyses were undertaken. In the first, the measure of entrepreneurial self-efficacy included in the regression analysis was the 'global ESE' variable measured with a single question (presented in sub-section 4.2.3.3). In the second, self-efficacy was represented by the three dimensions identified in factor analysis in order to investigate more precisely the relative impact of each dimension (identified in sub-section 4.2.1.2 as strategic, administrative or financing) on intention. Only the model with the best explanatory power, the one using the 'global ESE' variable is presented in the following pages. The results of the second regression analyses are presented in appendix 11.

Hierarchical regression analysis was used to test the four hypotheses related to proposition 1.2. The elements incorporated in each model are described below.

- Model 8: Control variables (advancement at T0, age, gender, employment status and education level)
- Model 9: Model 8 + attitude
- Model 10: Model 8 + social norm
- Model 11: Model 8 + global entrepreneurial self-efficacy
- Model 12: Full model including controls, attitude, social norm and global ESE

As before, a verification of adherence to the assumptions of regression analysis was undertaken by analysing the residuals. No outliers were detected. In addition, the absence of multicollinearity problems was checked using Variance Inflation Factors (VIF). The details of the successive models, including exact significance levels and VIFs are shown in appendix 12.

Before each analysis, means, standard deviations and correlations between the variables included in the analyses are reported. Given the categorical nature of some of the control variables (gender, employment status and education level) Spearman's rho correlation coefficients between the different model elements were used. As predicted by the model, all three supposed antecedents of intention had highly significant positive correlations with intention (table 41 below).

Table 41: Means, Standard Deviations and Spearman's rho correlations. Intention, attitude, social norm and global ESE

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Advancement at T0	2.98	2.544	1.000								
2. Age	34.70	10.030	0.077	1.000							
3. Gender [Female = 1]	0.42	0.494	-0.062	-0.017	1.000						
4. Employment status [Active =1]	0.43	0.496	0.073	-0.008	-0.162 *	1.000					
5. Education level [≥Bac+2 = 1]	0.60	0.490	0.080	0.015	0.108	-0.096	1.000				
6. Attitude	5.2727	1.2845	0.138 †	-0.097	0.003	-0.002	-0.268 ***	1.000			
7. Social norm	30.0241	10.6037	0.047	-0.083	0.048	-0.113	-0.043	0.277 ***	1.000		
8. Global ESE	5.32	1.384	0.416 ***	-0.016	-0.112	0.079	-0.091	0.317 ***	0.242 **	1.000	
9. Intention	6.1404	0.9162	0.330 ***	-0.110	-0.041	-0.133 †	-0.127 †	0.502 **	0.434 ***	0.527 ***	1.000

***. Correlation is significant at the 0.000 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed) †. Correlation is significant at the 0.10 level (2-tailed).
Listwise n = 187

The regression analyses details provided in the next two tables give more information about the combined effect of these variables. As can be seen in the model summaries (table 42), each model adds significant explanatory power to the initial model with the controls

only. In addition, model 12 which includes all three pre-supposed antecedents of intention provides the highest explanatory power with an adjusted R^2 of 0.500.

Table 42: Model summary: Intention vs. attitude, social norm and global ESE

Model Summary[f]: DV = intention; IVs = attitude, social norm and global ESE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
8	0.442[a]	0.195	0.173	0.83313	0.195	8.787	5	181	0.000
9	0.593[b]	0.351	0.329	0.75022	0.156	43.217	1	180	0.000(*)
10	0.590[c]	0.348	0.326	0.75193	0.153	42.201	1	180	0.000(*)
11	0.599[d]	0.359	0.338	0.74542	0.164	46.097	1	180	0.000(*)
12	0.722[e]	0.522	0.500	0.64765	0.326	40.505	3	178	0.000(*)

a. Predictors: (Constant), Education level, Age, Advancement at T0, Employment status, Gender

b. Predictors: (Constant), Education level, Age, Advancement at T0, Employment status, Gender, Attitude

c. Predictors: (Constant), Education level, Age, Advancement at T0, Employment status, Gender, Social Norm

d. Predictors: (Constant), Education level, Age, Advancement at T0, Employment status, Gender, Global ESE

e. Predictors: (Constant), Education level, Age, Advancement at T0, Employment status, Gender, Attitude, Social Norm, Global ESE

f. Dependent Variable: Intention

(*) Change statistics are versus model 8 (i.e. vs. model with controls only).

Results concerning these regression analyses are shown in table 43 and the implications for hypotheses 1.2.a to 1.2.d in table 44. Overall these results provide support for the 'intention-part' of the theory of planned behaviour. All three antecedents are found to contribute to the prediction of intention either when taken individually or when included in a common analysis. The analysis also suggests that attitude and social norm provide a similar contribution to the prediction of intention, while global ESE seems to contribute slightly more (respective beta coefficients in model 12 of 0.282, 0.261 and 0.328).

Table 43: Linear regression analysis results. Entrepreneurial intention vs. attitude, social norm and global ESE

DV = entrepreneurial intention / IVs = attitude, social norm and global ESE

(Beta coefficients reported) n = 187	Model 8	Model 9	Model 10	Model 11	Model 12
Controls :					
Advancement at T0	0.369***	0.320***	0.348***	0.180**	0.184**
Age	-0.188**	-0.135*	-0.155*	-0.165**	-0.113*
Gender (Female = 1)	-0.011	-0.012	-0.026	0.012	-0.005
Employment status (Active = 1)	-0.164*	-0.161**	-0.118†	-0.191**	-0.151**
Education level (Bac+2 and above = 1)	-0.141*	-0.035	-0.121*	-0.107†	-0.031
Intention model:					
Attitude		0.414***			0.282***
Social Norm			0.396***		0.261***
Global ESE				0.451***	0.328***
Adjusted R^2	0.173	0.329	0.326	0.338	0.500
Model's significance: F-value (sig.)	8.787 (0.000)	16.233 (0.000)	16.023 (0.000)	16.830 (0.000)	24.277 (0.000)
F-value change vs. model 8 with controls only (sig.)	n/a	43.217 (0.000)	42.201 (0.000)	46.097 (0.000)	40.505 (0.000)

*** sig.= 0.000 ; ** sig.≤0.01 ; * sig.≤0 .05; † sig.≤0.10

Table 44: Summary of results – Intention vs. attitude, social norm and global ESE

Hypothesis number (Model)	Independent variable(s) considered	Dependent variable	Results
1.2.a (Model 9)	Attitude	Intention	**Supported:** highly significant positive relationship detected
1.2.b (Model 10)	Social norm	Intention	**Supported:** highly significant positive relationship detected
1.2.c (Model 11)	Global ESE	Intention	**Supported:** highly significant positive relationship detected
1.2.d (Model 12)	Attitude Social Norm Global ESE	Intention	**Supported:** highly significant positive relationship detected for all three elements.

The attention next turned to assessing the veracity of the theoretically proposed link between intention and entrepreneurial self-efficacy and whether an activity actually gets started.

5.4 Investigative Question 1.3: What are the determinants of nascent ventures outcomes (started or withdrawn)?

For this question the elements impacting the fact that the initial intention was or was not transformed into a new venture one year later were tested. Three outcome categories were possible for cases included in the analysis of investigative questions 1.1 and 1.2: started, withdrawn or ongoing (i.e. neither started nor stopped but still being worked on). Qualitative analysis of this last category revealed that it included varying degrees of progress in the projects. Some seemed to be very close to being launched while others appeared to have a much farther remote potential start date and lower probability of starting. As a result, the choice was made to exclude this category and to retain only cases with a clear outcome: started or withdrawn. Among the initial 325 cases, 285 fell in these two categories: 172 had been withdrawn and 113 started (table 45). The analysis of investigative questions 1.3 and 1.4 was based on these cases.

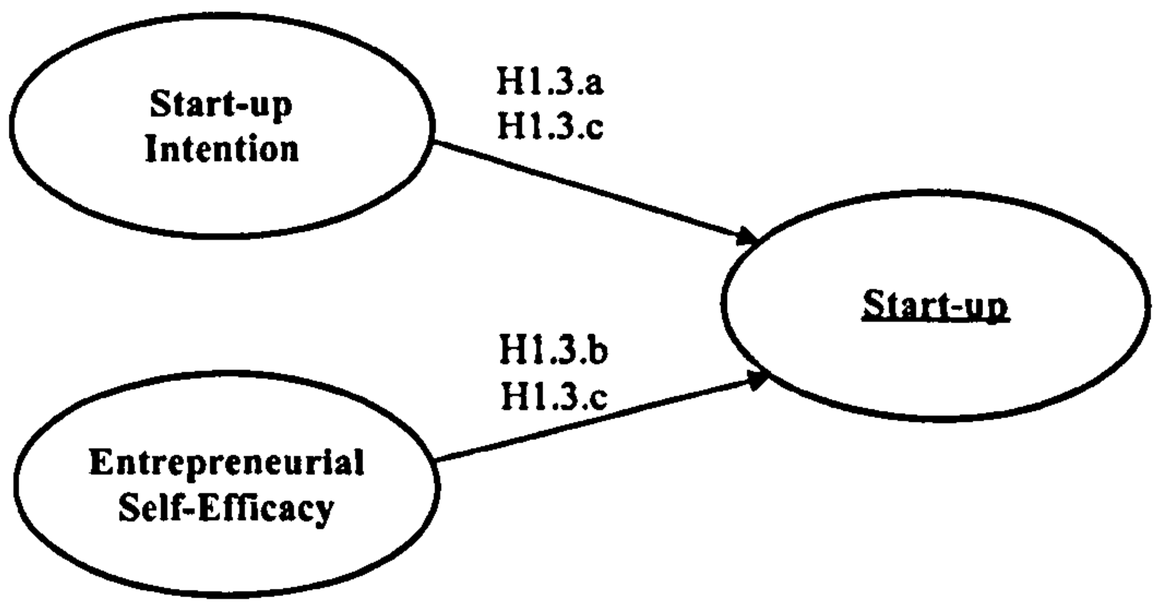
Table 45: Start-up outcome for the 325 cases included in the intention analysis

Outcome			
		Frequency	%
Valid	**Withdrawn**	**172**	**52.9**
	Started	**113**	**34.8**
	Ongoing	40	12.3
	Total	325	100.0

For this investigative question, the dependent variable was expressed in the form of a binary variable with '0' indicating projects that had been withdrawn and '1' projects which had been started. Binary logistic regression was therefore the method used to test the hypotheses listed below.

The first proposition represented the intention-based framework linking intention and ESE to subsequent start-up behaviour (figure 25).

Figure 25: Partial model for investigative question 1.3



- **Proposition 1.3**: The higher the initial entrepreneurial self-efficacy and the stronger initial intention, the greater is the likelihood of actual start-up.

  - **Hypothesis 1.3.a**: There is a significant positive relationship between entrepreneurial self-efficacy and the actual creation of a start-up.

  - **Hypothesis 1.3.b**: There is a significant positive relationship between start-up intention and the actual creation of a start-up.

- **Hypothesis 1.3.c**: There is a significant positive relationship between entrepreneurial self-efficacy and start-up intention and the actual creation of a start-up.

Possible relationships between outcome and the human or social capital variables considered for the analysis were first investigated in order to determine whether some should be included as controls. This was done by running binary logistic regressions using the outcome of the project as a dependent variable and the human and social capital variables as predictors (table 46).

Table 46: Binary logistic regression. Start-up outcome vs. human and social capital
DV = Outcome / IVs = human and social capital variables

(B reported) n = 192	Step 0	Model 18	Model 19	Model 20
Controls				
Advancement at T0		0.299***	0.293***	0.303***
Age		0.025	0.007	0.021
Gender (Female = 1)		-0.665*	-0.682*	-0.667†
Employment status (Active = 1)		-0.886**	-0.921**	-0.908**
Human capital variables				
Education level			0.408	
Length of work experience			0.450	
Previous start-up project			0.124	
Prior start-up training			-0.123	
Social capital variables				
Entrepreneurial parents				0.164
Entrepreneurial friends				0.791*
Professional network membership				-0.232
Constant	-0.273†	-1.385*	-1.155	-1.855*
-2LL	262.637	225.883	223.790	220.805
Cox & Snell R^2		0.174	0.183	0.196
Nagelkerke R^2		0.234	0.246	0.263
Model's Chi^2 (sig.)		36.754 (0.000)	38.847 (0.000)	41.832 (0.000)
Step's Chi^2 vs. Model 18 with controls only (sig.)		n/a	2.093 (0.719)	5.078 (0.166)
Original classification %	56.8	56.8	56.8	56.8
Model's classification %		66.1	64.6	69.3
Model's % correct Stopped	76.1	75.2	77.1	
Model's % correct Started	53.0	50.6	59.0	

*** sig = 0.000 ; **sig.≤ 0.01 ; * sig.≤ 0.05; † sig.≤ 0.1

In order to meet logistic regression analysis requirements in terms of number of cases per variable, two separate analyses were run. Model 19 reports the one related to human capital and model 20 the one related to social capital. In addition, the presence of outliers was also

checked and none was detected. The results of these regression analyses presented in table 46 indicated that the presence of entrepreneurial friends should indeed be included as a control. It was therefore added to the previously identified control variables (advancement at T0, age, gender and employment status). No other variable reached statistical significance.

As with proposition 1.2, two series of models were then tested. Each included a different operationalisation for entrepreneurial self-efficacy: the global entrepreneurial self-efficacy measure (models 21 to 24 presented in table 49 with their full details provided in appendix 13) or the three ESE dimensions (strategic, administrative and financing) identified in chapter 4 (models 25 to 28 presented in appendix 14 with their details).

Hierarchical regression analysis was used again and the models included the following variables:

- Model 21: Control variables (advancement at T0, age, gender, employment status and entrepreneurial friends)

- Model 22: Model 21 + global ESE

- Model 23: Model 21 + intention

- Model 24: full model including controls, global ESE and intention.

After excluding cases with missing data, 224 cases were included in the analysis. No outliers were detected. Means, standard deviations and correlations coefficients for the different variables included in the analysis are reported in table 47.

Table 47: Means, Standard Deviations and Spearman's rho correlations. Global ESE, intention and start-up outcome

	Mean	SD	1	2	3	4	5	6	7	8
1.Advancement at T0	2.76	2.497	1.000							
2. Age	35.19	9.764	0.075	1.000						
3. Gender [Female = 1]	0.43	0.497	-0.079	-0.058	1.000					
4. Employment status [Active = 1]	0.40	0.490	0.008	-0.022	-0.120 †	1.000				
5. Entrepreneurial friends [yes = 1]	0.74	0.441	0.121 †	0.059	-0.071	-0.032	1.000			
6. Global ESE	5.27	1.399	0.338 ***	-0.005	-0.117 †	0.027	0.147 *	1.000		
7. Intention	6.0949	1.0843	0.357 ***	-0.112 †	-0.039	-0.165 *	0.073	0.473 ***	1.000	
8. Outcome [started = 1]	0.41	0.493	0.353 ***	0.089	-0.107	-0.103	0.149 *	0.203 **	0.322 ***	1.000

***. Correlation is significant at the 0.000 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed). †. Correlation is significant at the 0.1 level (2-tailed).

Listwise n = 224

The regressions results presented in table 49 provide strong support for the link between start-up intention measured at T0 and start-up outcome one year later. However, entrepreneurial self-efficacy seems to add very little, if any, explanation to the models including intention only. Results concerning each hypothesis are summarised in table 48.

Table 48: Summary of results – Start-up outcome vs. ESE and Intention

Hypothesis number (Model)	**Independent variable(s) considered**	**Dependent variable**	**Results**
1.3.a (Model 22)	Global ESE	Start-up outcome	**Not Supported:** no significant relationship detected
1.3.b (Model 23)	Intention	Start-up outcome	**Supported:** significant positive relationship detected
1.3.c (Model 24)	Global ESE Intention	Start-up outcome	**Not supported for global ESE Supported for intention**

Table 49: Binary logistic regression analysis. Start-up outcome vs. global ESE and intention
DV = start-up outcome / IVs = global ESE and intention

(B reported) n = 224	Step 0	Model 21	Model 22	Model 23	Model 24
Controls :					
Advance_t0		0.308***	0.281***	0.239***	0.238**
Age		0.014	0.015	0.026	0.026
Gender (Female = 1)		-0.371	-0.348	-0.382	-0.381
Employment status (Active = 1)		-0.558†	-0.573†	-0.390	-0.392
Entrepreneurial friends (Yes =1)		0.543	0.497	0.493	0.492
Intention model:					
Global ESE			0.157		0.008
Intention				0.612**	0.607**
Constant	-0.361**	-1.774**	-2.545**	-5.817***	-5.827***
-2LL	303.349	266.229	264.436	254.538	254.534
Cox & Snell R^2		0.153	0.159	0.196	0.196
Nagelkerke R^2		0.206	0.215	0.264	0.264
Model's Chi^2 (sig.)		37.120 (0.000)	38.913 (0.000)	48.810 (0.000)	48.815 (0.000)
Step's Chi^2 vs. Model 21 (sig.)		n/a	1.793 (0.181)	11.690 (0.001)	11.695 (0.003)
Original classification %	58.9	58.9	58.9	58.9	58.9
Model's classification %		68.3	67.9	72.3	72.3
Model's % correct Stopped		78.8	78.8	79.5	79.5
Model's % correct Started		53.3	52.2	62.0	62.0

*** sig = 0.000 ; **sig.≤ 0.01 ; * sig.≤ 0.05; † sig.≤ 0.10

In their model, Krueger and Carsrud (1993) suggested that external influences could have an impact on the link between intention and start-up behaviour. Other authors have indicated support offered to nascent entrepreneurs as an area requiring further investigation (Cuzin and Fayolle, 2004). In the final part of this data analysis, the focus therefore was placed on the support that the nascent entrepreneurs relied on during the year following the information session at which the initial data collection took place.

5.5 Investigative Question 1.4: What is the impact of external support on the development of nascent ventures?

This section includes a general investigation of the impact of support on start-up outcome and a focus on the specific professional support provided by CCI branches. Variables related to each part are first presented before turning to actual analysis.

5.5.1 Support-related variables

The second-wave telephone questionnaire included an item asking people to indicate who had provided them with the most useful advice for their project. Four categories were proposed: family and personal environment, professional environment, one or more professional advisors and one or more organisations specialised in company creation. The first two categories were grouped under 'personal advice' and the last two under 'professional advice'.

Respondents were also asked (1) whether they had used CCI support after the information session and, if so, (2) which service(s) they had used (meeting an advisor, a lawyer, an accountant etc.). The first information was coded as a dummy variable (0 indicating "no use" and 1 "use"). The second was used to assess the *variety of services* used with a count of 1 added for each type of service. Five types of services were included: meeting with a CCI advisor, a lawyer or an accountant, attending a training session and other. This last

category included for example consulting the CCI library, meeting with a notary, coaching and mentoring activities and networking activities such as local companies' visits. This variety of services variable thus had a theoretical 0 to 5 range, though in practice it ranged from 0 to 4 as no one reported using all 5 possibilities. In addition, only 3 cases reported having used 4 types of services while 22 cases reported 3 types of services. In order to be able to perform subsequent analyses with a sufficient number of cases per category, these cases were grouped with those reporting having made use of two different types of support.

The 'variety of CCI services used' variable therefore included three categories as indicated in table 50 below:

Table 50: Questionnaire items for external support variables

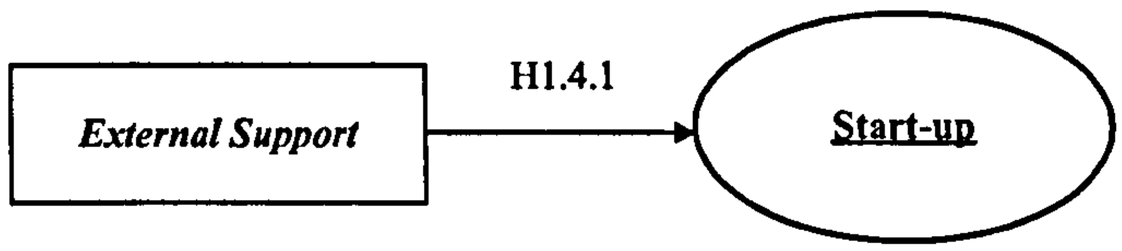
Variable name	Operationalisation	Measurement level	Questionnaire Item #
Useful advice	1 item indicating the most useful provider of advice for the project	Categorical: None; Personal; Professional	Q2_4
Use of CCI support	Use of CCI support services between T0 and T1	Dichotomous: No = 0 /Yes = 1	Q2_8
Variety of services used	Number of different CCI services used between T0 and T1	3 categories for number of different services used: None; 1 type; 2 or more types	Q2_8

In this section, two propositions were made. The first related to the general use of external support (sub-section 5.5.2) and the second to the specific use of professional support offered by the CCI network with whom the study was undertaken (sub-section 5.5.3). The initial sample for this analysis consisted of the 285 individuals for whom a clear start-up outcome could be identified.

5.5.2 External support and start-up outcome

The objective of this section was to determine if significant differences could be detected between people who said the most useful advice they received came from personal sources, those who said it came from professional sources and those who reported that they received no useful advice.

Figure 26: Partial model for proposition 1.4.1



- **Proposition 1.4.1**: The likelihood of actual start-up depends on the external advice and support that the nascent entrepreneur relies on during his preparation.

  - **Hypothesis 1.4.1**: The proportion of started projects differs between people who received no useful external advice, people for whom the most useful advice came from personal sources and people for whom the most useful advice came from professional sources.

Given that the variables involved in this hypothesis were categorical, Chi^2 tests were conducted in order to test it. Though some differences in the percentages of started projects were apparent between the different categories, these were not statistically significant (table 51). Hypothesis 1.4.1 was therefore not supported.

Table 51: Chi^2 tests for external support

Bivariate analyses, frequencies for use of external support by French nascent entrepreneurs					
		Project withdrawn %	Activity started %	X^2	Sig.
Most useful Provider of external support (n = 252)	None (n = 44)	61.4	38.6	0.604	0.739
	Personal (n = 95)	54.7	45.3		
	Professional (n = 113)	58.4	41.3		

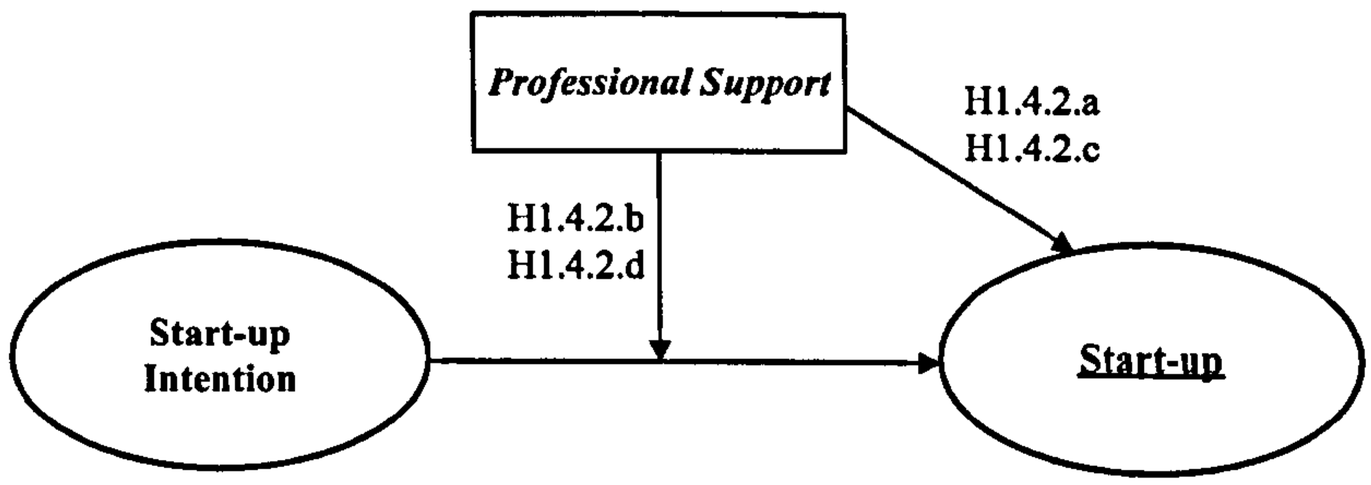
The analysis next turned to investigating whether the use of CCI support impacted start-up outcomes.

5.5.3 Professional support and start-up outcome

In this section, the objective was to test whether the support offered by the CCI had any impact on start-up outcome. Following Krueger and Carsrud (1993) the effect of support on start-up outcome in Model A (figure 21) was represented as one moderating the link between intention and actual start-up. A moderator is a variable that can influence the link

between two other variables (Baron and Kenny, 1986). Specifically in this study's context, the objective was to test if the use of CCI support had an impact on the intention-outcome link detected previously. In other words, it was tested whether an interaction between intention and use of CCI support could be detected in such a way that the impact of intention on start-up outcome could be seen as being influenced by the use of CCI support. Given that a previous analysis (section 5.4) failed to detect a direct effect for entrepreneurial self-efficacy on start-up outcome, no ESE variable was included in this part of the analysis.

Figure 27: Partial model for proposition 1.4.2



- **Proposition 1.4.2:** The greater the use of professional support, the greater is the likelihood of actual start-up.

  - **Hypothesis 1.4.2.a**: There is a significant and positive relationship between the use of CCI support and the likelihood of actual start-up.

  - **Hypothesis 1.4.2.b**: The relationship between intention and start-up behaviour is strengthened by the use of CCI support.

  - **Hypothesis 1.4.2.c**: There is a significant and positive relationship between the variety of CCI services used and the likelihood of actual start-up.

  - **Hypothesis 1.4.2.d**: The relationship between intention and start-up behaviour is strengthened by the variety of CCI support used.

Hierarchical regression analysis may be used to test moderator effects. In this case, the final regression model tested includes an interaction term between the independent variable analysed and its hypothesised moderator (Frazier et al., 2004; Hayes and Matthes, 2009). The interactive term is calculated as the multiplication between the two variables considered (intention and use of CCI support in this case). Furthermore, in order to avoid multicollinearity problems when continuous independent variables are involved, it is recommended to standardise their value before undertaking the analysis (Frazier et al., 2004). The variable 'intention' was therefore standardised as 'Z-intention' and the analyses run using the 'Z-intention' variable. In addition, given that the dependent variable was the binary start-up outcome, logistic regression was used for the analysis.

CCI effect was thus tested in two steps. A possible additive effect was first tested, whereby support was hypothesised to influence outcome directly. The interaction variable was then introduced in the regression to investigate the possible presence of moderating effect for the use of CCI assistance on the intention-outcome link. The number of valid cases for these regression analyses was 226. Two binary logistic regression models including the use of CCI support (model 30) and the 'Z-intention x use of CCI support' interaction term (model 31) were first tested and compared with a base model including the previously identified control variables (project's advancement at T0, age, gender, employment status and the presence of entrepreneurial friends) and Z-intention (model 29). The procedure was repeated with the 'variety of support used' variable. Model 32 includes the variety of support variable and model 33, the interaction terms.

Descriptive information and correlation coefficients between the different variables are provided in table 52. In this initial correlation table, the 'use of CCI support' and 'variety of support used' are confirmed to be positively correlated with outcome and the relationship appears to be slightly stronger for 'variety'. No outlier was identified for this series of analyses. The details of the regression models are given in appendix 15.

Table 52: Means, Standard Deviations and Spearman's rho correlations. Intention, Use of CCI support, variety of CCI support used and start-up outcome

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Advancement at T0	2.78	2.488	1.000								
2. Age	35.25	9.737	0.078	1.000							
3. Gender [Female = 1]	0.43	0.497	-0.102	-0.047	1.000						
4. Employment status [Active =1]	0.41	0.492	0.012	-0.027	-0.125 †	1.000					
5.Entrepreneurial friends [yes = 1]	0.73	0.445	0.082	0.070	-0.071	-0.044	1.000				
6. Z-Intention	0	1	0.348 ***	-0.117 †	-0.056	-0.164 *	0.061	1.000			
7. CCI support [yes = 1]	0.42	0.494	0.067	0.039	0.059	-0.114 †	0.028	0.112 †	1.000		
8. Variety of support used[a]	0: 58.1 % 1: 25.2 % 2: 16.7 %	n/a	0.077	0.037	0.048	-0.098	0.026	0.132 *	0.966 ***	1.000	
9. Outcome [1 = started]	0.41	0.493	0.334 ***	0.108	-0.115 †	-0.107	0.144 *	0.308 ***	0.170 *	0.187 **	1.000

***. Correlation is significant at the 0.000 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed). †. Correlation is significant at the 0.1 level (2-tailed).
Listwise N = 226
a. 0 = "No CCI support used"; 1 = 1 "type of support used"; 2 = "2 or more types of support used"

Variables included in the analysis using the 'Use of CCI' variable (table 53) were:

- Model 29: Control variables (advancement at T0, age, gender, employment status, presence of entrepreneurial friends and Z-intention)

- Model 30: Model 29 + 'Use of CCI support'

- Model 31: Model 30 + 'Z-Intention x Use of CCI support' variable

Variables included in the analysis using the 'Variety of CCI support used' variable (table 54) were:

- Model 29: Control variables (advancement at T0, age, gender, employment status, presence of entrepreneurial friends and Z-intention)

- Model 32: Model 29 + 'Variety of CCI support used'

- Model 33: Model 32 + 'Z-Intention x Variety of CCI support used' variable

The summary of these results as they related to each proposed hypothesis are presented in table 55.

Table 53: Binary logistic regression analysis - Start-up outcome vs. intention and CCI support

DV = start-up outcome / IVs = intention and CCI support

(B reported) n = 226	Step 0	Model 29	Model 30	Model 31
Controls :				
Advance_t0		0.223**	0.225**	0.233**
Age		0.030†	0.029†	0.029†
Gender (Female = 1)		-0.389	-0.442	-0.460
Employment status (Active = 1)		-0.401	-0.360	-0.389
Entrepreneurial friends (Yes =1)		0.507	0.482	0.440
Z-Intention		0.656**	0.632**	0.458†
Use of CCI support			0.651*	0.578†
Z-Intention x Use of CCI support				0.383
Constant	-0.358**	-2.181**	-2.413**	-2.361**
-2LL	306.185	258.799	254.318	253.426
Cox & Snell R^2		0.189	0.205	0.208
Nagelkerke R^2		0.255	0.276	0.281
Model's Chi^2		47.386	51.867	52.760
(sig.)		(0.000)	(0.000)	(0.000)
Step's Chi^2 (sig.)		n/a	4.481 (0.034)	0.893 (0.345)
Original classification %	58.8	58.8	58.8	58.8
Model's classification %		71.7	72.6	73.5
Model's % correct Stopped		79.7	80.5	80.5
Model's % correct Started		60.2	61.3	63.4

*** sig. = 0.000; ** sig.≤ 0.01 ; * sig.≤ 0.05; † sig.≤ 0.10

Table 54: Binary logistic regression analysis - Start-up outcome vs. intention and Variety of CCI support used

DV = start-up outcome / IVs = intention and Variety of CCI support used

(B reported) n = 226	Step 0	Model 29	Model 32	Model 33
Controls :				
Advance_t0		0.223**	0.225**	0.230**
Age		0.030†	0.029†	0.030†
Gender (Female = 1)		-0.389	-0.438	-0.429
Employment status (Active = 1)		-0.401	-0.382	-0.423
Entrepreneurial friends (Yes =1)		0.507	0.488	0.457
Z-Intention		0.656**	0.619**	0.463†
Variety of CCI support used (Ref = 0)				
1 type of service used			0.449	0.357
2 or more types of services used			0.924*	0.893*
Z-Intention x variety of CCI support used (Ref = 0)				
1 type of service used				0.489
2 or more types of services used				0.183
Constant	-0.358**	-2.181**	-2.426**	-2.398**
-2LL	306.185	258.799	253.277	252.285
Cox & Snell R^2		0.189	0.209	0.212
Nagelkerke R^2		0.255	0.281	0.286
Model's Chi^2 (sig.)		47.386 (0.000)	52.909 (0.000)	52.760 (0.000)
Step's Chi^2 (sig.)		n/a	5.523 (0.063)	0.991 (0.609)
Original classification %	58.8	58.8	58.8	58.8
Model's classification %		71.7	74.8	72.6
Model's % correct Stopped		79.7	81.2	79.7
Model's % correct Started		60.2	65.6	62.4

*** sig. = 0.000; ** sig.≤ 0.01 ; * sig.≤ 0.05; † sig.≤ 0.10

Table 55: Summary of results – Start-up outcome vs. strategic ESE, administrative ESE, financing ESE, intention and CCI support

Hypothesis number (Model)	Independent variable(s) considered	Dependent variable	Results
1.4.1 (Chi² test)	Type of most useful external advice	Start-up outcome	Not supported: no statically significant difference in start-up outcome could be detected between none, personal or professional support
1.4.2.a (Model 30)	Use of CCI support	Start-up outcome	Supported: Regression indicates the presence of a positive relationship
1.4.2.b (Models 29 to 31)	Interaction Intention x Use of CCI support	Start-up outcome	Moderating effect of the use of CCI advice on intention not supported. Interaction term is not statistically significant.
1.4.2.c (Model 32)	Variety of CCI services used	Start-up outcome	Supported: Regression indicates the presence of a positive relationship found to be statistically significant in the regression models including intention for the people who used 2 or more CCI services.
1.4.2.d (Models 29, 32 and 33)	Interaction Intention x Variety of CCI services used	Start-up outcome	Moderating effect of the variety of CCI services used on intention not supported. Interaction term not statistically significant.

While the positive effect detected for CCI support (models 30 and 32) boded well for the support network, it prompted the same question as the one facing researchers interested in the launching phase of start-ups (Sammut, 1998): are the individuals making use of support the ones who need it most? In order to clarify this aspect, a series of t-tests and Chi² tests were run to check if differences in profiles could be found between the people who chose to use CCI support after the information session and those who did not (table 56). As initial intention was identified as an important precursor of start-up outcome, it was included in this analysis. In addition, possible differences in profile related to control and human and social variables used in the preceding analyses were also tested using the overall sample of 325 individuals. From these results it is apparent that the people who made use of CCI support after the information session tended to be people who had higher educational levels and were members of professional networks but did not then have a professional occupation.

Table 56: Differences in profiles related to use of CCI support

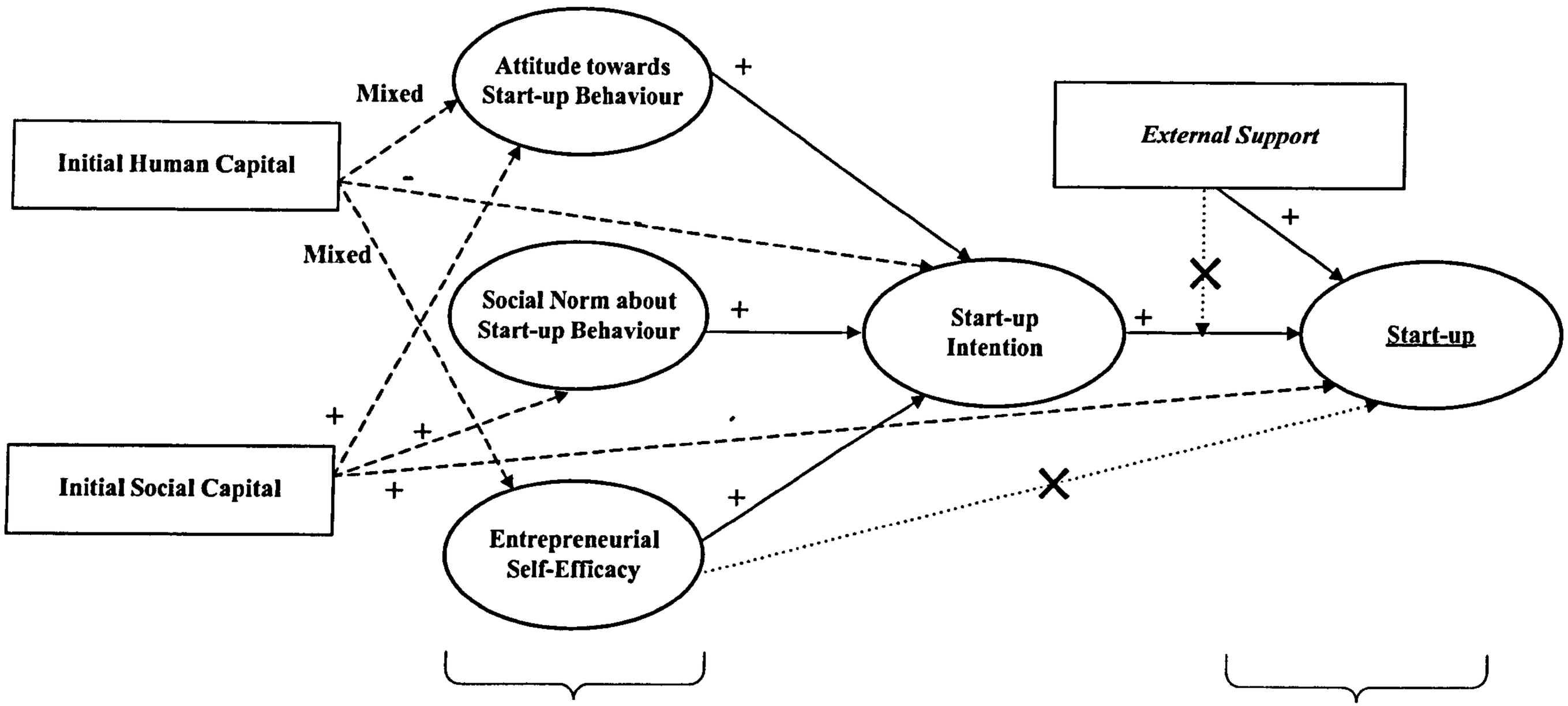
		No use of CCI support (n_0)	Use of CCI support (n_1)	Significance level (t-test or Chi²)
Initial intention level (n_0=174; n_1 = 119)	Intention at T0	6.0474	6.2311	0.142 (t-test)
Advancement at T0 (n_0 = 186; n_1 = 124)	Count of gestation behaviours at T0	2.66	2.98	0.267 (t-test)
Age (n_0 = 176; n_1 = 120)	Average age	35.56	36.57	0.410 (t-test)
Gender (n_0 = 191; n_1 = 125)	Male	61.8%	52.8%	0.113 (Chi²)
	Female	38.2%	47.2%	
Employment status (n_0 = 177; n_1 = 120)	**Not active**	**54.2%**	**65.8%**	**0.046 (Chi²)**
	Active	**45.8%**	**34.2%**	
Education (n_0 = 178; n_1 = 121)	**< Bac + 2**	**55.1%**	**30.6%**	**0.000 (Chi²)**
	≥ Bac + 2	**44.9%**	**69.4%**	
Work experience (n_0 = 161; n_1 = 111)	≤ 10 years	55.3%	53.2%	0.729 (Chi²)
	> 10 years	44.7%	46.8%	
Participation in previous start-up project (n_0 = 180; n_1 = 121)	No	81.1%	87.6%	0.135 (Chi²)
	Yes	18.9%	12.4%	
Prior start-up training (n_0 = 187; n_1 = 124)	No	87.2%	83.1%	0.314 (Chi²)
	Yes	12.8%	16.9%	
Entrepreneurial parents (n_0 = 183; n_1 = 120)	No	69.4%	71.7%	0.673 (Chi²)
	Yes	30.6%	28.3%	
Entrepreneurial friends (n_0 = 179; n_1 = 121)	No	27.4%	25.6%	0.736 (Chi²)
	Yes	72.6%	74.4%	
Member of a professional network (n_0 = 167; n_1 = 111)	**No**	**74.3%**	**62.2%**	**0.032 (Chi²)**
	Yes	**25.7%**	**37.8%**	

The implications of these results and of those presented in the series of analyses undertaken in previous parts of this chapter are now discussed.

5.6 Discussion for Research Question 1

The objective of this section is to provide a synthesis of the implications of the results presented above. A graphical summary of the findings is first presented in figure 28 below. The discussion is then organised as follows: the first sub-section is dedicated to the impact of human and social capital variables that were included in analyses related to both intention and start-up outcomes. A brief discussion of the control variables is also provided. Following this, the results concerning the 'intention part' of the model are

Figure 28: Summary of findings: project level



Models 8-12 (global ESE) p. 176
Models 13-17 (3-dimension ESE) p. 301

Models 29-31 (use of CCI) p. 189
Models 32-33 (variety of support) p. 190

Models 1-7 (intention and antecedents) p. 170
Models 18-20 (start-up) p. 179
(only significant relationships shown)

Models 21-24 (global ESE) p. 182
Models 25-28 (3-dimension ESE) p. 307

analysed, before turning to the discussion concerning the 'outcome part' and, finally, the influence of support.

In analysing these results, one important thing should be borne in mind: all the participants in this survey were people pursuing a start-up project. This analysis is therefore not looking to differentiate between nascent entrepreneurs and the general population, but rather to identify within this group of nascent entrepreneurs why some carried their project through to start-up while others decided to withdraw. In order to inform the findings presented previously and in line with the interpretivist stance adopted here (details concerning that choice are provided in chapter three), qualitative information collected from the participants is also brought into the discussion to help interpret the results and illustrate some of the points raised.

5.6.1 Human and social capital influences on the intention model

The first variables discussed are human and social capital variables. It was investigated whether, as suggested by Shook et al. (2003) and Linan and Santos (2007), they could be found to exert a distinct influence on different intention model elements. Specifically, it was investigated if education, length of work experience, previous start-up experience and previous start-up training (human capital) and the presence of entrepreneurial parents, entrepreneurial friends or membership in a professional network (social capital) could be found to influence each variable of the intention model element directly.

Among human capital variables, the education level was found to exert a direct negative influence on both attitude and intention. While Delmar and Davidsson (2000) and Brooksbank and Thompson (2008) have suggested that nascent entrepreneurs tend to be more educated than people not involved in entrepreneurship, the results presented here therefore concur with others who have detected a negative effect of higher education on entrepreneurial intentions. De Clerq and Arenius (2006) for example only found a positive

effect for having a secondary degree but not a post-secondary one on the propensity to engage in entrepreneurial undertakings. Henley (2007) also suggested that higher education reduces one's aspiration to start a new venture and, more recently, Fitzsimmons and Douglas (2010) have detected a direct negative effect of higher education on intention.

This study's results not only confirm this negative effect but also suggest that it acts both directly on intention and indirectly by making the attitude towards start-up less favourable. It has elsewhere been shown that attaining higher educational levels increases the likelihood of labour force participation, reduces the risk of being unemployed and also has positive effects on the chances of retaining one's job in times of economic difficulties (OECD, 2010). The negative relationship found here between education and both intention and favourableness of attitude therefore possibly relates to the person's perception of professional opportunity costs and career options (Amit et al., 1995; Van Auken, 1999). People with higher education levels may have more professional options at their disposal and therefore may be less willing to incur the costly sacrifices often involved in pursuing a start-up project. In addition, the base category selected here for education includes professional degrees for which creating one's activity is a natural career route. Concerning entrepreneurship-related human capital, start-up training received prior to attending the initial information session was found to have only a weak positive influence on global ESE.

This said, looking specifically at the effect of education on intention, when the TPB-hypothesised antecedents are entered in the regression, this education effect becomes much less significant. In fact, only for the regressions including social norm and entrepreneurial self-efficacy individually as predictors of intention (models 10, 11, 15 and 16) does it still reach some statistical significance. This suggests that in a complete model its effect may be mediated by the antecedents of intention identified by the theory of planned behaviour.

In addition, looking at the transition from intention to start-up outcome, this study's results lead to the same tentative interpretation as Henley's (2007): the regression coefficient

suggests a positive effect for education on start-up outcome but it fails to reach statistical significance. If such a differentiated effect was confirmed, it would suggest that for higher educated groups professional opportunity costs dominate in the early stages of entrepreneurship (lower likelihood of getting involved) but then become surpassed by more 'classical' positive human capital considerations later in the process.

One indirect effect was also detected for education: people with higher educational attainments seemed to be more liable to use CCI support after the information session, (possibly because they are more accustomed to receiving training in a formal manner), which in turn was shown to increase the likelihood of start-up outcomes. Therefore, if a future study was to show education to be positively related to the transformation from intention to start-up, this could be a reflection of a higher use of professional support by people with higher degrees.

The positive effect of prior work experience on entrepreneurial self-efficacy found by others such as Kickul et al. (2008) or Linan and Chen (2009) using student samples was not confirmed here. Only a weak positive effect was apparent on administrative ESE (model 5) but none on global ESE (model 3). Furthermore, a positive effect was detected for length of work experience on attitude. In addition, regression coefficients indicated that length of work experience seemed to be positively related to intention (model 7) and actual transition to start-up (model 19) but the relationship did not reach statistical significance. However, the more entrepreneurship-related work experience variable of previous start-up experience was not significant in any of the regressions involving human capital variables.

Turning to social capital variables, the presence of entrepreneurial parents was not found to influence any of the intention model elements significantly. In addition, while Davidsson and Honig (2003) suggested that membership of a professional network could be a driver for the transformation of projects in actual start-ups, the above results (tables 39 and 46) show that for this sample it had a positive influence only on initial attitude, but not on any

of the other variables (including one-year later start-up outcome). The only social capital element found to exert a positive influence on outcome is the presence of entrepreneurial friends for which a weak positive impact was also detected on social norm and financing ESE.

In summary these results corroborate Kolvereid's (1996b) suggestion of a more pronounced indirect rather than direct effect for human and social capital variables on intention. In addition, it can be seen that fewer than expected human and social capital variables reach statistical significance in this study. For example, the absence of impact of previous start-up experience and parental business ownership came as a surprise. There are a number of possible explanations for this. The first is that the influence of these variables is apparent earlier in the process. They may foster people's interest for entrepreneurship and their likelihood of engaging in nascent venture projects (Delmar and Davidsson, 2000; Davidsson and Honig, 2003), but once individuals become involved these initial entry influences do not seem to impact either their intention level or their likelihood of starting up their project. The composition of this sample which is made up of working adults could also be making them less likely to be influenced by some of these variables (especially the one related to parental experience) than would be people just entering the workforce or still studying (Gray, 1998). This would also explain why friends are the reference group found to be significant in influencing both some hypothesised precursors of entrepreneurial behaviour and actual start-up.

Another possible explanation is that the operationalisation of these variables may need to be refined. For example, one implicit assumption in the dichotomous operationalisation retained here is that all parental or previous start-up experiences carry the same 'value'. However, the perception that people have of these experiences may vary from one individual to the other. In this study, individuals were asked to indicate their perception of these experiences on a seven-point Likert scale anchored on "very negative" and "very

positive". While the answers to these questions indicate a predominance of positive perceptions, some respondents report rather negative perceptions. In fact, the proportion of individuals selecting negative answers (1 to 3 on the proposed scale) were respectively 7.6 % for the perceptions of parental entrepreneurial experience and 10.6 % for the perception of own prior start-up experience (table 57). While the sample size in this study did not make it possible, these numbers suggests that a finer operationalisation than the binary one often used could be beneficiary for scholars investigating such elements.

Table 57: Perception of parental and own previous start-up experience

	1 Very negative	2	3	4	5	6	7 Very positive
Perception of parental entrepreneurial experience (n = 93)	2	3	2	11	19	20	36
Percentage	2.2 %	3.2 %	2.2 %	11.8 %	20.4 %	21.5 %	38.7 %
Perception of own prior start-up experience (n = 47)	0	1	4	6	8	11	17
Percentage	0 %	2.1 %	8.5 %	12.8 %	17.0 %	23.4 %	36.2 %

Before turning to the core of the model itself, some control variables included in the study deserve attention. First of all, one variable is consistently highly significant and positive across all models related to intention and outcome: advancement at time of initial survey. This variable consisted of a count of the gestation behaviours undertaken prior to attending the information session.

Table 58: Anova for advancement at T0 depending on outcome

Outcome	Mean	N	Std. Deviation	ANOVA
Withdrawn	2.05	167	2.250	F = 16.757
Ongoing	2.95	38	2.701	
Started	3.77	112	2.596	Sig. = 0.000
Total	2.77	317	2.551	

On average, before attending the initial information session, individuals who started their projects had undertaken almost twice as many gestation behaviours (3.77 vs. 2.05) as people whose projects were withdrawn (table 58).

The impact of this project's advancement variable was already apparent in a preliminary analysis of the data collected at time 0 from all participants (Delanoë and Brulhart, forthcoming) and the interpretation that was then made of it is reinforced by the finding that it remains highly significant in explaining ultimate start-up outcomes. The importance of this variable is interpreted as an illustration of the "escalation" principle described by Bruyat (1993). This principle suggests that the more people advance in their project, i.e. the more they undertake concrete actions with the objective of starting it, then the more difficult it becomes for them to turn around and abandon the project (Bruyat, 1993; Fayolle and Degeorge, 2007).

The consistently high significance of this variable in the different models presented here highlights the importance of controlling for varying levels of advancement when studying nascent ventures. Another aspect illustrated by this variable is the variety of projects that advisors are faced with. Some people contact them at the very early stages of their thinking (as early as before having identified a clear project to pursue), while others contact them just before start-up and show up with a very precise request such as assistance in selecting legal status or validating financial forecasts. Being able to adapt to such a diversity of demands is one of the challenges faced by support agencies.

Gender, on the other hand, among the different models considering intention and its antecedents, only reached statistical significance in model 4 related to strategic ESE. It should be noted however that while being a female did not appear to impact initial intention levels, it seemed to have some negative association with start-up outcome. Being a woman was significantly and negatively related to start-up outcome in the models including only human and social capital variables as predictors (models 18 to 20) and had a

consistently negative, though not statistically significant, coefficient in the intention-based regressions related to start-up outcome (models 21 to 31). The lack of association between gender and intention seems to contradict the existing literature. However, as for parental influence, this effect could be apparent earlier in the process when self-selecting to attend the information session or differentiating nascent entrepreneurs from the general population. When it comes to transition into actual start-up, the age group considered here could also imply that family-related matters may come into play. For example five women reported pregnancies and two having young children as the reason for their withdrawal. Two men also mentioned related reasons for their withdrawal: one indicated that his self-employed wife's pregnancy prompted him to postpone his project and the other that having children had made him more cautious.

Finally, the variable representing employment status suggests that people currently in work exhibit weaker intention levels (models 7 to 12) and are more likely to withdraw their project (models 18 to 20) than those not actively involved in the labour market. In addition, as shown in table 59 below, although the differences between the categories are not statistically significant (Chi² 2-sided significance 0.181), people who seem to be the most likely to carry their project through to start-up could be the ones who have been unemployed for a short period.

Table 59: Outcome by employment status

		Outcome		Total
		Withdrawn	Started	
Active	Count	71	34	105
	% within Outcome	67.6%	32.4%	100.0%
Unemployed for less than 12 months	Count	54	48	102
	% within Outcome	52.9%	47.1%	100.0%
Unemployed for more than 12 months	Count	15	12	27
	% within Outcome	55.6%	44.4%	100.0%
Other (student, retired or not involved in the job market)	Count	20	13	33
	% within Outcome	60.6%	39.4%	100.0%
Total	Count	160	107	267
	% within Outcome	59.9%	40.1%	100.0%

The negative effect for professional activity found in the regressions could therefore indicate the presence of a necessity push effect similar to the one detected by Brooksbank and Thompson (2008) in the UK for entrepreneurial aspirations and nascent entrepreneur status. In this study, the effect is apparent on both intention (model 7) and one-year later outcomes (models 18 to 20). Its effect on start-up outcome does however seem to be mediated by intention as its significance disappears when intention is included in the regressions related to start-up outcomes (models 23, 24, 27 and 28).

5.6.2 Assessment of intention model applied to nascent entrepreneurs

The analysis presented here provides strong support for the 'intention portion' of the model as all three supposed antecedents of intention are found to be highly significant. In addition, the contribution of the three elements can be seen as relatively balanced, though entrepreneurial self-efficacy seems to carry a slightly higher weight than either attitude or social norm (model 12). The explanatory power of the models including all three TPB-hypothesised antecedents is 0.500 for the one including global ESE and 0.466 for the one with the three ESE sub-dimensions which compares favourably with those found in a variety of other settings using TPB-based analyses as reported by Armitage and Conner (2001).

Attitude consistently appears as a highly significant predictor for intention (models 9, 12, 14 and 17). Given that the operationalisation retained for it included opportunity costs elements, this result argues for policy initiatives aimed at lowering initial opportunity costs linked to entering nascent entrepreneurship. Such schemes exist in France in the form, for example, of the "congé ou temps partiel pour création d'entreprise" (unpaid leave or part-time working for company creation). Under that scheme, salaried employees with at least 24 months of tenure in a company may ask for unpaid full- or part-time leave of up to one year to work on their project. Should they decide not to go through with their start-up

project, they are guaranteed to have a job waiting for them at the end of the leave. The results presented here suggest that such schemes have chances of successfully stimulating nascent entrepreneurship in France.

In entrepreneurship research, the debate concerning the weight of each antecedent of intention is most open regarding the social norm element. While some identify a significant positive effect to it (Kolvereid, 1996b; Kolvereid and Isaksen, 2006; Carr and Sequeira, 2007; Engle et al., 2010), others fail to detect such an effect (Krueger et al., 2000; Autio et al., 2001) or consider it to be indirect by influencing other antecedents of intention (Emin, 2004; Krueger and Kickul, 2006; Linan et al., 2007; Linan and Chen, 2009). The current study concurs with those which consider it significant (models 10, 12, 15 and 17). The debate concerning the role that should be attributed to social norm is not specific to entrepreneurship and it seems to warrant further investigation (Armitage and Conner, 2001).

The importance of social norm in this study argues in favour of encouraging actions aimed at making up for its low level for people coming from environments perceived as offering low entrepreneurial encouragement. Given that social norm influences the strength of intention to engage in entrepreneurial undertakings, such actions should be undertaken at an earlier stage than the one studied here. In this analysis, a slight effect on social norm was detected for the presence of entrepreneurial friends (model 2). The magnitude of this effect is presented in table 60.

Table 60: T-test social norm mean and presence of entrepreneurial friends

Social Norm		N	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed) t-test
Entrepreneurial friends	No	53	27.5519	10.84477	1.48964	0.052
	Yes	163	30.8313	10.56330	0.82738	

Thus, these results suggest that providing people who do not have entrepreneurial friends with networking opportunities or mentoring possibilities from existing entrepreneurs could

be expected to produce positive effects on intention. Other studies have shown that such initiatives may also contribute to raising a person's self-efficacy via vicarious experiences (Bandura, 1986) and that these might be most effective if the mentee can identify with the mentor in some respect (Gist, 1987). These initiatives should therefore be tailored to the specific profiles of the individuals supported.

Turning to entrepreneurial self-efficacy, two operationalisations were tested here. The one using a 'global ESE' indicates that for this sample, global ESE carries a higher weight than each attitude and social norm in influencing intention. The results produced by the three-dimension ESE operationalisation (detailed in appendices 11 and 14) call for further analysis. While financing ESE appears to be a significant predictor of intention, both when considered in isolation and when included together with attitude and social norm in the full model (models 16 and 17), the results related to strategic and administrative ESE are less conclusive. Administrative ESE does not appear significant in model 16, though it reaches a weak significance level in model 17. On the other hand, strategic ESE appears significant when entrepreneurial self-efficacy is considered in isolation, but it loses its significance when attitude and social norm are brought into the model. This suggests the presence of interaction effects (other than multicollinearity which was verified as not being a problem) between these variables and attitude and social norm, something which could warrant further investigation. In addition, the fact that model 12 including the general ESE variable provides a higher explanatory power than model 17 which involves the three ESE sub-dimensions confirms the view that, as discussed in chapter four, the multi-dimensional operationalisation of entrepreneurial self-efficacy can still be improved.

Nevertheless, the importance of entrepreneurial self-efficacy in forging entrepreneurial intention identified by others (recent examples include: Zhao et al., 2005; Kickul et al., 2008) is reaffirmed here. This suggests that interventions aimed at increasing such entrepreneurial self-efficacy are a good way to increase entrepreneurial intention. Hence,

for educators or practitioners looking to generate entrepreneurial aspirations, it is very important to verify that their interventions do indeed result in an increase in entrepreneurial self-efficacy. In fact, some studies have cast doubt on the effectiveness of some education programs in reaching that goal for all their students (Cox et al., 2002; Souitaris et al., 2007; Fayolle and Gailly, 2009). It has elsewhere been shown that similar experiences may not produce the same effects on ESE or intention itself for males and females (Kickul et al., 2008). Furthermore, Cox et al. (2002) and Fayolle and Gailly (2009) also suggest that students involved in entrepreneurship education programmes exhibit different development of their ESE or intention, depending on their profile. Their results, combined with the importance for ESE identified in this study, suggest that tailoring the programmes to the students' backgrounds in order to achieve the desired increase in entrepreneurial self-efficacy may be an important issue for education programmes.

Concerning the transition from intention to actual behaviour, only part of the theory is validated by the current study. Specifically, the strong link between intention and subsequent behaviour is confirmed (models 23, 24, 27 and 28). However, when it comes to assessing a possible direct link between entrepreneurial self-efficacy and outcome, its presence is not apparent in the data used here. Kolvereid and Isaksen (2006) had reached the same conclusion from their study and suggested that their result could be due to an operationalisation of ESE not focused enough on self-employment. The wording used here for the global ESE measure may have induced the same problem as it referred to perceived ability in starting "a company".

However, one difference may be noted between models using the three ESE sub-dimensions and those using the global ESE variable: the three-dimension operationalisation does improve the classification power of the models and this improvement is apparent for both the withdrawn and started categories (model 28 vs. model 27). This suggests that there is some information in entrepreneurial self-efficacy

variables that is not captured by the other dimensions. The regression coefficients for model 26 suggest that this information could be carried in part by financing ESE which in the absence of intention manages to reach some (albeit low) statistical significance.

At first sight these results argue in favour of rejecting the theoretically-supposed direct link between ESE and behaviour. In fact, the conclusion that can be drawn here is that entrepreneurial self-efficacy, like attitude and social norm, only affects start-up behaviour indirectly through intention. This actually concurs with Kolvereid and Isaksen's (2006) findings.

However a different operationalisation of ESE sub-dimensions may in the future paint a different picture. The relative importance of ESE sub-dimensions could be dependent on the stage of the nascent venture that is being studied as suggested by Mueller and Goic (2003). In the present study, models 16 and 17 show financing ESE exerting a significant influence on intention. The results concerning strategic and administrative ESE are less clear-cut as they are not consistent between models 16 and model 17. Models 26 and 28 suggest that financing ESE is also important for the conversion of intentions into actual actions, but that its effect is mediated by intention. No significant effect is detected in either model 26 or 28 for strategic or administrative ESE which suggests that their effect is only apparent earlier in the process. Refining entrepreneurial self-efficacy measurements could in the future shed some light on these issues.

Having said this, the results reported in models 24 and 28 also show that a large part of the transition from intention to actual start-up remains unexplained by the model. Kolvereid and Isaksen (2006) used a continuous measure for self-employment and reported an adjusted R^2 of 0.412 for their TPB-based model. Compared to this, Nagelkerke R^2s of 0.264 and 0.297 for models 24 and 28 respectively look somewhat low. However, these numbers cannot be compared directly as they are computed in different ways. In contrast to the adjusted R^2 of linear regressions, Cox and Snell's R^2 and Nagelkerke's R^2, reported for

binary logistic regressions, do not represent the amount of variance explained (Cohen et al., 2003). Instead they provide indication of the goodness of fit for the model, but they are known to be consistently lower than the adjusted R^2 related to linear regressions (Cohen et al., 2003). In addition, in Kolvereid and Isaksen's (2006) study the individuals surveyed were "captured" at a more advanced stage than the ones included here. They had already registered their activity and thus their commitment to their project when they were first surveyed may have been higher than that for the individuals surveyed here.

The large variety of realities hidden in the "withdrawn project" category, as illustrated by the information presented in table 61, may explain in part the difficulty the model has in providing a more accurate classification of the outcome.

Table 61: Future plans for respondents whose projects were withdrawn

				Plans to start working on the project again in...				
	Total	"Full" give-up	"Unsure" give-up	Less than 1 year	1 to 2 years	2 to 5 years	Over 5 years	Does not know when
Project postponed	85			21	13	16	6	29
	54.1%			24.7%	15.3%	18.8%	7.1%	34.1%
Project abandoned but intends to work on another project in the future	37			10	4	8	4	11
	23.6%			27.0%	10.8%	21.6%	10.8%	29.7%
Project abandoned and does not know if will ever engage in another project	20		20					
	12.7%		12.7%					
Project abandoned and does not intend to engage in another project	15	15						
	9.6%	9.6%						
Total	157	15	20	31	17	24	10	40
	100%	9.6%	12.7%	19.7%	10.8%	15.3%	6.4%	25.5%

People who indicated that they belonged to this category were asked to specify whether their project was postponed or abandoned. If postponed, they were asked when they were planning on working on it again and if abandoned, whether they intended on working on a

new start-up project in the future and if so when. Of the 172 'withdrawn' group respondents, 157 provided detailed answers to these questions (table 61).

Overall, more than half of them indicated that their project was postponed. In addition, fewer than 10% of the respondents stated that they did not intend to get involved in a new start-up project in the future. Looking more closely at the details in table 61, it is apparent that even among the people who intended to resume developing their project or work on a new project some diversity was present in terms of when they intended to do so. For both categories about a quarter of the participants indicated that they intended to do so within a year, while around 30% said they did not know when. Given the relatively small numbers in this survey and the geographic concentration of the respondents, these proportions may not generalise to other nascent entrepreneurs beyond this specific sample. However, they do illustrate the variety of situations involved in the insufficiently studied group of projects that are abandoned (Van Auken, 1999; Shane and Delmar, 2004).

In addition, these individuals were also asked to indicate the main reason(s) for their withdrawal. Following Shane and Delmar (2004) and Bonneau et al. (2005) seven categories were proposed for this answer: (1) the preliminary study showed that the project was not viable, (2) a personal or health problem, (3) you accepted a salaried job, (4) you got promoted in your existing job, (5) you are currently working on another project, (6) financing problems or (7) other. Multiple answers were accepted, so the total exceeds the number of respondents (table 62).

Again, given the small numbers presented here, these results are not meant to be generalised. They do however shed some light on the variety of reasons why a project may be withdrawn and the importance of the context in which nascent entrepreneurship studies are undertaken. These people engaged in their projects at a time when uncertainty about the outcome of the financial crisis was at a peak (autumn 2008) and worked on setting

them up during a period when bank credit rationing was present (throughout the year 2009) and this shows in their answers.

Table 62: Reasons for withdrawal

	Total	Not viable	Personal or health problem	Accepted salaried job	Got promoted	Other project	Financing	Crisis and economic context	Other
Postponed projects	106	7	14	10	1	1	28	18	27
		6.6%	13.2%	9.4%	0.9%	0.9%	26.4%	17.0%	25.5%
Abandoned projects	82	18	3	9	1	6	22	3	20
		22.0%	3.7%	11.0%	1.2%	7.3%	26.8%	3.7%	24.4%
Total	188	25	17	19	2	7	50	21	47
		13.3%	9.0%	10.1%	1.1%	3.7%	26.6%	11.2%	25.0%

Starting with those who mentioned that the project was not viable, the two most quoted explanations for this were the impossibility to locate clients and the "crisis / economic conditions". Personal or health problems were mostly family-related problems including the death of a spouse, miscarriage, divorce or having small children in charge. Those indicating financing problems raised first the lack of own capital contribution or the fact that the project turned out to be too expensive, second the fact that banks refused to finance the project and third that they had to save for the project. Finally, 8 of the 47 respondents who chose the "other" category mentioned that they had engaged in some extra education or training, two needed to acquire more experience and two others mentioned the "safety" associated with having a salaried job. It is apparent from this list of reasons that their diversity may impact the explanatory power of the models.

One element that these people had in common was that they had turned to a same French support network for assistance following their entrepreneurial aspirations. The effect of the use they actually made of this support is now discussed.

5.6.3 Impact of external support on start-up outcome

The initial analysis investigating if a project outcome was impacted by the source of advice perceived as most useful did not produce any statistically significant results. Though the proportion of started projects looked higher for people who reported having received some useful advice (personal or professional) than for those who reported not having received such advice, the difference was not statistically significant.

The investigation therefore turned to the analysis of the effect of the support provided by the CCI after the initial information session. Specifically, it was investigated if the participants who made use of CCI support after the information exhibited significantly different start-up rates from those who did not. Logistic regression analysis confirmed the presence of higher transformation rate (higher proportion of actual start-up outcomes) for those who used CCI services after having attended the information session, especially for those who used two or more types of services. Information about the actual magnitude of this effect is presented in table 63 below.

Table 63: Chi² tests for use of CCI support

Bivariate analyses, frequencies for use of external support by French nascent entrepreneurs					
		Project withdrawn %	Activity started %	X^2	Sig.
Use of CCI support (n = 278)	No (n = 169)	65.1	34.9	5.179*	0.023
	Yes (n = 109)	51.4	48.6		
Variety of assistance used (n = 278)	0 (n = 169)	65.1	34.9	7.852*	0.020
	1 (n = 66)	57.6	42.4		
	2 or more (n = 43)	41.9	58.1		

It was further investigated if this use of CCI services could be found to moderate the relationship between intention and start-up outcome. In other words, it was checked if the use of CCI support could be found to strengthen the previously identified link between intention and start-up outcome. No such relationship could be detected for this sample. Similarly, an additive but not moderating effect was detected concerning the variety of CCI

services used; a higher variety of services used increased the likelihood of starting the activity, though this higher variety was not found to influence the intention-start-up link. Hence, while a moderating effect had been hypothesised based on Krueger and Carsrud's (1993) model, the effect found here was an additive one.

The results indicating a positive effect for CCI support are encouraging for the network. However, a closer look at the profile of the individuals more likely to use this support suggests the presence of self-selection effects (Storey, 2003). Those most likely to use the CCI support are not currently professionally active, are in the higher education category and are already members of professional networks. The self-selection apparent here could raise some concerns for the CCI. This is highlighted by UK-based findings that show that business closure rates tend to be higher among graduates than among non-graduates, possibly due to their higher likelihood of seizing an opportunity perceived as more attractive should one arise (Kwong et al., 2006). Thus while the selection taking place may in the short-term induce more start-ups, it may also entail future problems regarding the evolution of these businesses. In addition, the fact that professionally active individuals do not follow through may also be a reflection of the need to adapt the services offered to integrate the constraints faced by such people, such as the difficulty of attending face-to-face meeting during business hours.

During the initial interviews, CCI advisors suggested that all people contacting them for information regarding company creation were directed towards the half-day information session. Given the limited number of advisors available for individual appointments, this information session was meant to provide general information about start-up and serve as a self-selection process for further support based on people's initial motivation. Instead, what these results show is that it seems to deter people with a lower education level from using the support offered to them.

One possible explanation for this lies in the topics addressed during the presentation. As part of the preliminary information collection for this thesis, the author attended one information session in June 2007. Interviews at the different branches involved in the project confirmed the similar format followed by all of them. In the meeting attended by the author, the services offered by the CCI were first presented. The presentation of the start-up process was then given by insisting on the sequential nature of the process and the importance of the business plan. In fact, the importance of writing such a business plan was constantly reaffirmed throughout the presentation and it was also presented as a pre-requisite for being put in contact with an accountant.

Some authors have shown that business plan formalisation varies from one nascent entrepreneur to another and that the value of writing a business plan early in the process may be related to the start-up context (Liao and Gartner, 2006). Thus the focus placed on formal business plan writing during this information session may deter some people from relying on additional CCI support. In addition, a second part of the session was run by an accountant and a lawyer. After saying that the viability of a project was the most important thing to assess they described in length the various registration options available for start-ups, the importance of carefully reviewing one's marital contract before engaging in a start-up (or else run the risk of losing all the household wealth in the case of failure) and the fiscal implications of various legal start-up statuses. Providing such level of detail on these issues at an early stage of the process may also have a discouraging effect on people who are not familiar with them. One practical implication of these results could be that care should be taken for their design not to be overly formal and based on technical aspects (registration process, fiscal or social aspects of start-up). More focus should possibly be placed on providing nascent entrepreneurs with practical information aimed at helping them think their project through.

A similar selection effect was found in France concerning vocational training for which access was found to be related to the higher education degree possessed (Seillier, 2007). Seillier suggested that this may reflect the fact that companies direct their training investments towards the categories for which they expect higher returns in terms of increased productivity gains and profitability. Still, he also reaffirmed that while firms may follow that economic logic, given the importance for all individuals to receive proper lifelong training (EC, 2006), policy makers should be the ones ensuring that people with a lower educational level also get appropriate access to such training. A similar effect may be present here. Support networks are trying to integrate qualitative aspects in their programmes as reflected by the mission statement of the French Chambers of Commerce and Industry (ACFCI, 2008). Still, individual counsellors may actually provide more support to the projects they feel have a better chance of getting through, those run by individuals who are more receptive to their structured planning process, and these tend to be the ones run by people with a higher level of education.

5.7 Summary of chapter 5

Overall the results presented in this chapter confirm that intention-based models may contribute to understanding why some projects get started and others are withdrawn. Attitude, social norm and entrepreneurial self-efficacy were all found to provide explanations for the initial level of intention of a group of French nascent entrepreneurs. In turn, intention was found to have a positive impact on start-up outcome. The practical implications of these results have been discussed.

However, a large part of the transformation process of intention into actual start-up remains unexplained. One reason for this may lie in the inherently varied nature of entrepreneurial undertakings as described in the discussion section and in the importance that events not directly related to the project (personal or macro-economic for example)

may have for the outcome. Such variety clearly is a challenge for entrepreneurship scholars looking to understand start-up processes.

The fact that support provided by the CCI outposts after the information sessions was found to be positively related to start-up outcome is encouraging for them. Nevertheless, a word of caution has been added as it seems that the initial information seems to act as a filter through which people with a lower educational level exclude themselves from further support. Suggestions for adapting information sessions in order to reduce such biases have therefore been provided.

This chapter was devoted to analysis at the project level. In the next chapter, the analysis moves to the level of the nascent entrepreneur with the objective of understanding the impact that having engaged in a nascent start-up project may have had on the person. In addition to evaluating the impact for the overall group considered here, a series of analyses are conducted to assess whether entrepreneurs' profiles (for example in terms of demographic aspects, human and social capital variables or initial entrepreneurial perceptions levels) influence the outcome at the individual level.

6. Research question 2: analysis at the nascent entrepreneur level

In this chapter, the focus shifts to the nascent entrepreneur as the analysis presented aims to answer the second research question (model B, p.109): **How does a nascent venture experience affect the individuals involved in it?** This level of analysis reflects the view that limiting the assessment of nascent venture outcomes to project-level analyses may be missing part of the story as such experiences also result in changes for the individuals involved in them (Bruyat, 1993). It also suggests that entrepreneurship research could gain by better understanding how individuals are transformed by their participation in venture development experiences (Delanoë, forthcoming 2011).

The approach adopted in undertaking this analysis was inspired by the work of authors who have conducted research aimed at evaluating the impact of entrepreneurship education programmes on the individuals enrolled in them (Cox et al., 2002; Peterman and Kennedy, 2003; Souitaris et al., 2007; Fayolle and Gailly, 2009). While these scholars used student samples, the current study, given its reliance on a sample of actual nascent entrepreneurs, offered a unique opportunity to use an intention-based framework longitudinally to observe whether the involvement in a start-up project (i.e. practical experience) induces individual-level effects.

The chapter comprises six sections. In the first, the data preparation undertaken and the characteristics of the sample used for this analysis are described. The change in intention model elements between T0 and T1 is then analysed in relation to the project outcome. The possible relationships between the changes in these elements as regards their initial levels (section 3) and previous knowledge (section 4) are then investigated. This is followed by the evaluation of the impact of professional support on these changes. The fifth section presents the discussion of the results and the sixth the summary of the chapter.

6.1 Sample selection and data preparation for Research Question 2

The tests conducted in order to answer the second research question relied on the Internet or paper-based answers provided by respondents to the intention model elements at time 1. Of the 228 questionnaires collected at that time, some had to be excluded from the analysis because they were answered by people whose lack of real entrepreneurial interest was identified during the telephone interviews (as discussed in section 3.5). As a result, the sample available for the study of the second investigative question consisted of 194 people. Of these, 96 (49.5%) reported having withdrawn their project, 21 (10.8%) were still working on it and 77 (39.7%) had started their activity.

Before conducting the analysis the characteristics of this sample were compared to those of the 325-case sample used for chapters 4 and 5 data analyses. Tests checking for possible differences between the two samples in terms of advancement at T0, age, gender, employment status, human and social capital variables, as well as initial levels in the intention model variables revealed no statistically significant difference between the two (table 64) .

In addition, following the approach used by Souitaris et al. (2007), the analysis was undertaken on 'difference scores' measures. In other words, as the focus of analysis turned to the change in the intention model elements between T0 and T1, a new variable was created for each element by subtracting its value at time 0 from its value at time 1. A positive value in the 'change' variables created in this way thus indicates an increase in them between time 0 and time 1. People who reported that their activity had been launched were asked to answer the questions by evaluating them in the context of a potential new project. The variable representing the change in start-up intention level was calculated only for people whose project was either withdrawn or still being worked on. For people who had already launched an activity the intention to engage in a new (second) start-up project

Table 64: Characteristics of sample used to answer RQ2

		T0 Sample (n_0)	Selected cases (n_1)	Significance level (t-test or Chi²)
Advancement at T0 ($n_0 = 317$; $n_1 = 191$)	Count of gestation behaviours at T0	2.77	2.90	0.579 (t-test)
Age ($n_0 = 305$; $n_1 = 183$)	Average age	36.01	36.62	0.519 (t-test)
Gender ($n_0 = 325$; $n_1 = 194$)	Male	57.5%	61.9%	0.333 (Chi²)
	Female	42.5%	38.1%	
Employment status ($n_0 = 306$; $n_1 = 180$)	Not active	59.2%	59.4%	0.949 (Chi²)
	Active	40.8%	40.6%	
Education ($n_0 = 308$; $n_1 = 185$)	< Bac + 2	45.5%	41.6%	0.406 (Chi²)
	≥ Bac + 2	54.5%	58.4%	
Work experience ($n_0 = 279$; $n_1 = 175$)	≤ 10 years	53.8%	48.0%	0.232 (Chi²)
	> 10 years	46.2%	52.0%	
Participation in previous start-up project ($n_0 = 307$; $n_1 = 185$)	No	83.7%	83.8%	0.984 (Chi²)
	Yes	16.3%	16.2%	
Prior start-up training ($n_0 = 318$; $n_1 = 192$)	No	85.5%	84.9%	0.844 (Chi²)
	Yes	14.5%	15.1%	
Entrepreneurial parents ($n_0 = 310$; $n_1 = 185$)	No	70.0%	73.0%	0.480 (Chi²)
	Yes	30.0%	27.0%	
Entrepreneurial friends ($n_0 = 308$; $n_1 = 183$)	No	26.9%	21.3%	0.162 (Chi²)
	Yes	73.1%	78.7%	
Member of a professional network ($n_0 = 284$; $n_1 = 171$)	No	69.7%	66.7%	0.497 (Chi²)
	Yes	30.3%	33.3%	
Use of CCI support ($n_0 = 316$; $n_1 = 193$)	No	60.4%	57.0%	0.443 (Chi²)
	Yes	39.6%	43.0%	
Outcome of the project at T1 ($n_0 = 325$; $n_1 = 194$)	Withdrawn	52.9%	49.5%	0.520 (Chi²)
	Started	34.8%	39.7%	
	Ongoing	12.3%	10.8%	
Initial level of Attitude ($n_0 = 301$; $n_1 = 184$)	Value at T0	5.3300	5.3134	0.891 (t-test)
Initial level of Social Norm ($n_0 = 222$; $n_1 = 140$)	Value at T0	30.0349	30.2357	0.863 (t-test)
Initial level of Global ESE ($n_0 = 318$; $n_1 = 189$)	Value at T0	5.27	5.30	0.808 (t-test)
Initial level of Strategic ESE ($n = 289$; $n_1 = 178$)	Value at T0	5.2353	5.2416	0.952 (t-test)
Initial level of Administrative ESE ($n_0 = 295$; $n_1 = 180$)	Value at T0	4.5356	4.6389	0.407 (t-test)
Initial level of Financing ESE ($n_0 = 273$; $n_1 = 167$)	Value at T0	4.5568	4.6198	0.634 (t-test)
Initial level of Intention ($n_0 = 298$; $n_1 = 183$)	Value at T0	6.1191	6.0997	0.841 (t-test)

could not be compared with either their initial intention level or with the future start-up intentions of people whose projects had been abandoned. Individuals with started projects were therefore excluded from the analysis related to the intention variable.

The analyses in this chapter were based on tests of mean differences. As the sample size shrank, due to attrition between time 0 and time 1 data collection, these tests demanded special attention to outliers. Hair et al. (2010) suggest that for sample sizes of 80 or fewer cases with standard scores of 2.5 or greater should be considered for exclusion, while for larger samples this threshold may be increased up to 4. Given the moderate sample size used here, the choice was made to remove variables located +3/- 3 standard deviations from the variables means. As a result of this 12 scores were removed from the analysis. Three of these concerned a change in attitude, one a change in social norm, one a change in global ESE, one in strategic ESE, two in administrative ESE, two a change in financing ESE and two a change in intention.

The variables levels at time 0 and time 1 and their correlation coefficients are reported in appendix 16. As bivariate analyses were used and in order to get meaningful number of cases the option was taken to exclude cases 'pairwise' rather than 'listwise'. The number of valid cases for each pair is therefore reported below the correlation coefficient. In addition, descriptive statistics for the different change variables after removal of the 12 outliers are provided in table 65.

For analyses assessing if the evolution in a variable between time 0 and time 1 was statistically significant (i.e. if the change variable was significantly different from zero), one-sample t-tests were used (Janssens et al., 2008). Other analyses which involved comparing changes in means for two categories of respondents (for example those with started projects vs. those with withdrawn projects) were undertaken using independent samples t-test (Janssens et al., 2008). Although t-test is a parametric test, it is considered to be robust to departures from normality (Malhotra et al., 2004) and therefore applicable

when the sample size reaches a minimum of 30 (Mbengue, 2007). In some of the following analyses the cell size did not reach that minimum required size of 30. The choice was therefore made to exclude the variables concerned as it was felt that these represented too few cases to be interpreted.

Table 65: Descriptive statistics of the change variables

	Mean (a)	Standard deviation	Minimum	Maximum	Skewness (s.e.)	Kurtosis (s.e.)
Change in Attitude (n = 170)	-0.6370***	1.3712	-4.7	3.00	-0.380 (0.186)	0.636 (0.370)
Change in Social Norm (n = 125)	-1.6380†	9.49758	-26.75	19.50	-0.326 (0.217)	0.174 (0.430)
Change in Global ESE (n = 181)	-0.2707*	1.60854	-5.00	3.00	-0.361 (0.181)	0.181 (0.359)
Change in Strategic ESE (n = 167)	-0.2380**	1.02741	-2.75	2.75	-0.015 (0.188)	-0.036 (0.374)
Change in Administrative ESE (n = 167)	0.4890***	1.43665	-3.67	4.00	-0.199 (0.188)	0.363 (0.374)
Change in Financing ESE (n = 152)	-0.5230***	1.45386	-4.50	3.00	-0.154 (0.197)	-0.305 (0.391)
Change in Intention (b) (n = 104)	-0.7837***	1.09891	-3.50	1.75	-0.236 (0.237)	0.289 (0.469)

(a) Significance of difference from zero based on one-sample t-tests:
*** p = 0.000; ** p ≤ 0.01; * p ≤ 0.05; † p ≤ 0.10

(b) Only includes ongoing or withdrawn projects

When more than two categories of respondents were involved (for example in the case of the evolution by sub-groups of initial level in the variable), ANOVA was used to check if statistically significant differences could be detected between the categories (Field, 2000). When using ANOVA, Hair et al. (2010) recommend a minimum cell size of 20. This requirement was met for all cell sizes.

In addition, it was checked if the various change variables were linked to the previously identified control variables of the project's initial advancement, age, gender and employment status. The possible relationship with age and advancement was tested using correlation coefficients and those with gender and employment status using Chi^2 test. As can be seen in table 66 below, a slightly negative relationship was found between advancement at T0 and changes in administrative and financing entrepreneurial self-efficacy and a positive one between age and change in intention. In addition, a negative

relationship was found between change in global entrepreneurial self-efficacy and being a woman (table 67). No other statistically significant relationship was detected for the control variables.

Table 66: Pearson correlations. Changes in perceptions vs. advancement and age

		Advancement at T0	Age
Change in attitude	Pearson Correlation	0.085	0.042
	N	169	160
Change in social norm	Pearson Correlation	-0.046	0.043
	N	124	117
Change in global ESE	Pearson Correlation	-0.070	0.117
	N	178	170
Change in strategic ESE	Pearson Correlation	-0.114	0.105
	N	165	158
Change in administrative ESE	Pearson Correlation	**-0.148†**	0.112
	N	**166**	158
Change in financing ESE	Pearson Correlation	**-0.183***	0.022
	N	**150**	144
Change in intention	Pearson Correlation	0.070	**0.221***
	N	103	**99**

Table 67: Chi² tests changes in perceptions vs. gender and employment status

	Gender	N	Mean	Significance (two-tailed)	Employment status	N	Mean	Significance (two-tailed)
Change in attitude	**Male**	106	-0.664	0.749	**Not Active**	95	-0.547	0.687
	Female	64	-0.594		**Active**	63	-0.635	
Change in social norm	**Male**	79	-2.0380	0.539	**Not Active**	65	-1.5962	0.813
	Female	46	-0.9511		**Active**	51	-1.1765	
Change in global ESE	**Male**	**112**	**-0.0982**	**0.066**	**Not Active**	100	-0.1700	0.411
	Female	**69**	**-0.5507**		**Active**	68	-0.3824	
Change in strategic ESE	**Male**	99	-0.3182	0.225	**Not Active**	91	-0.1978	0.815
	Female	68	-0.1213		**Active**	64	-0.2383	
Change in administrative ESE	**Male**	107	0.4486	0.629	**Not Active**	91	0.4652	0.666
	Female	60	0.5611		**Active**	64	0.5677	
Change in financing ESE	**Male**	96	-0.5677	0.621	**Not Active**	83	-0.5843	0.520
	Female	56	-0.4464		**Active**	57	-0.4211	
Change in intention	**Male**	60	-0.6708	0.223	**Not Active**	53	-0.7783	0.488
	Female	44	-0.9375		**Active**	41	-0.6220	

The actual data analysis started with a focus on the evolution in the different antecedents of behaviour depending on the fate of the pursued project. The results of it are presented in the next section.

6.2 Investigative Question 2.1: What is the impact of a nascent venture experience on the change in a nascent entrepreneur's perceptions towards entrepreneurship?

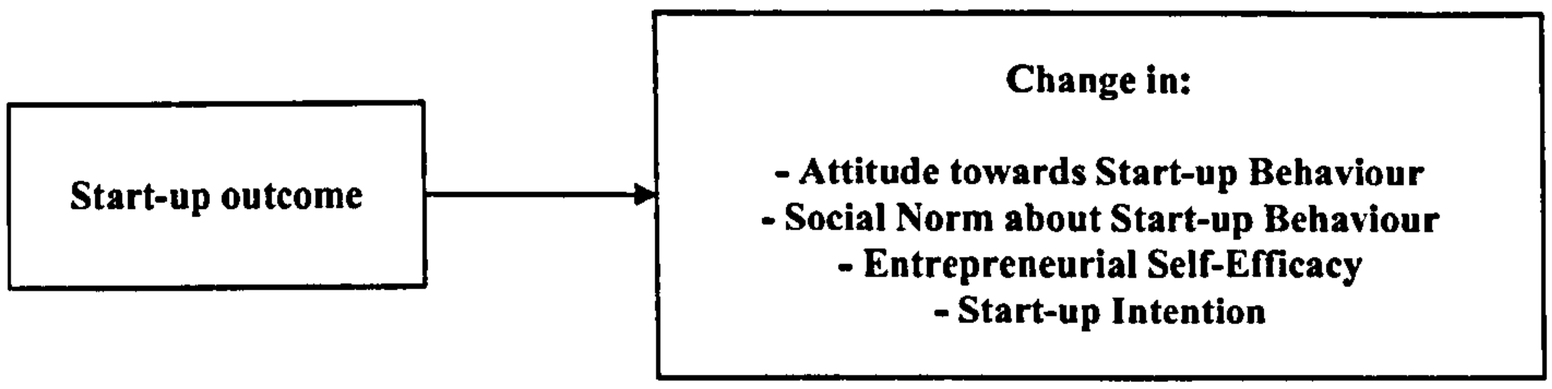
This first analysis compared the level of the intention model elements as they were recorded (1) at the beginning of the information sessions and (2) one year later. In other words, it evaluated the magnitude of the change variables. Self-efficacy theory suggests that positive experiences should induce improvement in self-efficacy, while negative ones should produce the opposite effect (Bandura, 1977, 1986). Similarly, intention model elements evolve with the experiences that individuals live through (Krueger, 2007).

In the context of this research *positive* experiences were represented by started activities, while *negative* ones consisted of the withdrawn projects. The 21 projects that were identified as still under consideration were left out of this part of the analysis as they could not be clearly classified as either positive or negative experiences. Therefore the sample used to answer this question consisted of 173 individuals: 77 with started projects and 96 with withdrawn ones.

Changes were checked independently for the two identified project outcomes: withdrawn or started. For started projects, it was expected that the measures would indicate an increase in the antecedents of behaviour between time 0 and time 1 (i.e. positive values for the change variables), while for withdrawn projects, the evolution was expected to be negative (i.e. negative values for the change variables). In addition, regardless of the actual change detected for each category, it was expected that people with positive experiences (started outcomes) would report more positive / less negative changes in entrepreneurial perceptions than those with negative experiences (withdrawn projects). As explained in the previous section, the change in intention was only measured for withdrawn projects. It was

expected to show a decrease between time 0 and time 1. Proposition 2.1 and the corresponding hypotheses reflect these expected relationships.

Figure 29: Partial model for proposition 2.1.



- **Proposition 2.1**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy between T0 and T1 is (a) positive for people whose activities started and (b) negative for people whose projects were withdrawn. The change in (4) start-up intention between T0 and T1 is negative for people whose projects were withdrawn

  - **Hypothesis 2.1.a**: For individuals whose activity was started, there is a significant and positive change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy between T0 and T1.

  - **Hypothesis 2.1.b**: For individuals whose project was withdrawn, there is a significant and negative change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention between T0 and T1.

  - **Hypothesis 2.1.c**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour and (3) entrepreneurial self-efficacy between T0 and T1 is more positive or less negative for people whose project was started than for those whose project was withdrawn.

In order to test hypotheses 2.1.a and 2.1.b, one sample t-tests were used. For each project-level outcome, it was checked if the change variables were significantly different from zero.

Independent samples t-test were used to test hypothesis 2.1.c. The results reported in table 68 show that although the majority of the changes investigated were significantly different from zero, they were not always in the expected direction. In fact for both groups (started or withdrawn), the only change variable for which a positive change was detected between T0 and T1 was the one related to administrative ESE. All other variables exhibited a decrease between the two measurements and these changes were statistically significant in all but three cases (global ESE for started projects and social norm and strategic ESE for withdrawn projects). In addition, only for global ESE was the evolution significantly different between the started and withdrawn groups. The interpretation proposed for these results will be presented in the discussion section.

Table 68: One-sample and independent samples t-tests for differences in changes in intention model variables by project status

			One-sample t-test (mean different from zero)		Independent samples t-test (samples means different from each other)	
Change in intention model variables	Project status	Initial level	Mean Change	Exact Statistical Significance (2-tailed)	Mean Change	Exact Statistical Significance (2-tailed)
Change in attitude	Started (n = 69)	5.3575	**-0.618**	**0.000**	-0.618	0.435
	Withdrawn (n = 82)	5.2073	**-0.797**	**0.000**	-0.797	
Change in social norm	Started (n = 47)	30.2500	**-2.8085**	**0.035**	-2.8085	0.269
	Withdrawn (n = 61)	30.0656	-0.7705	0.546	-0.7705	
Change in global ESE	Started (n = 70)	5.67	-0.0429	0.798	**-0.0429**	**0.033**
	Withdrawn (n = 90)	5.07	**-0.5889**	**0.003**	**-0.5889**	
Change in strategic ESE	Started (n = 62)	5.3629	**-0.3790**	**0.004**	-0.3790	0.275
	Withdrawn (n = 86)	5.1628	-0.1860	0.123	-0.1860	
Change in administrative ESE	Started (n = 63)	4.7460	**0.5450**	**0.008**	0.5450	0.462
	Withdrawn (n = 86)	4.5543	**0.3643**	**0.018**	0.3643	
Change in financing ESE	Started (n = 58)	5.0862	**-0.4741**	**0.021**	-0.4741	0.657
	Withdrawn (n = 78)	4.3590	**-0.5897**	**0.001**	-0.5897	
Change in intention	Started (n = 73)	6.3904	n/a	n/a	n/a	n/a
	Withdrawn (n = 85)	5.9088	**-0.9706**	**0.000**		

Overall, hypothesis 2.1.a (related to started projects) was found to be not supported. Only for administrative ESE was the expected positive change identified. No statistically significant change could be detected for global ESE. What is more, relationships opposite to those that had been hypothesised were detected for changes in attitude, social norm, strategic ESE and financing ESE. Hypothesis 2.1.b (related to withdrawn projects)

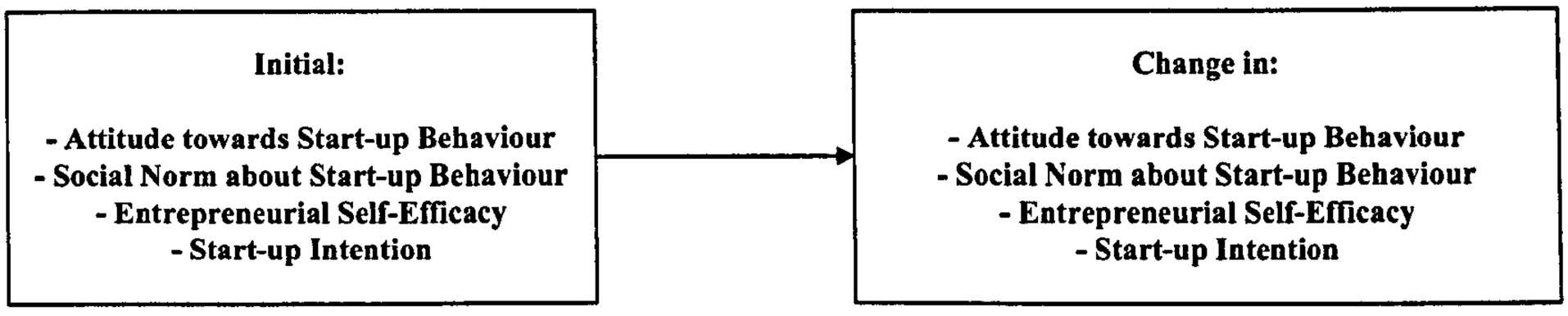
received partial support with confirmation of a negative change for attitude, global ESE, financing ESE and intention. The change in social norm and strategic ESE was not statistically different from zero, while the one in administrative ESE was positive. Hypothesis 2.1.c (comparing the started and withdrawn groups) received only very partial support as just one statistically significant difference between the two outcome groups could be detected, the one concerning global ESE, for which the withdrawn group exhibited a larger decrease than the started one.

The analysis next turned to investigating the relationship between the evolution in each intention model element and its initial level. In the following sections, all 194 respondents to the second-wave intention model elements were included in the analyses related to attitude, social norm and entrepreneurial self-efficacy. The analysis related to evolution in intention included people who reported that their projects were still being worked on or had been withdrawn (117 cases).

6.3 Investigative Question 2.2: How is the change in a nascent entrepreneur's perceptions towards entrepreneurship related to the initial level of the each element?

Existing research undertaken with students suggests the existence of some mean-reverting impact of training on the intention model elements (Cox et al., 2002; Souitaris et al., 2007; Fayolle and Gailly, 2009). In other words, it identifies the existence of a negative relationship between the initial level of each intention model element and the subsequent change recorded. Therefore, the objective of this section was to investigate whether this relationship was also apparent among the nascent entrepreneur sample involved in this study.

Figure 30: Partial model for proposition 2.2.



- **Proposition 2.2**: There is a significant negative relationship between the change in (a) attitude towards start-up behaviour, (b) social norm about start-up behaviour, (c) entrepreneurial self-efficacy and (d) start-up intention between T0 and T1 and the respective initial level of each variable.

  - **Hypothesis 2.2.a**: There is a significant negative relationship between the change in attitude towards start-up behaviour between T0 and T1 and the initial level of attitude.

  - **Hypothesis 2.2.b:** There is a significant negative relationship between the change in social norm about start-up behaviour between T0 and T1 and the initial level of social norm about start-up behaviour.

  - **Hypothesis 2.2.c:** There is a significant negative relationship between the change in entrepreneurial self-efficacy between T0 and T1 and the initial level of entrepreneurial self-efficacy.

  - **Hypothesis 2.2.d:** There is a significant negative relationship between the change in start-up intention between T0 and T1 and the initial level of start-up intention.

Two types of analyses were conducted. First, in line with the approach used by Souitaris et al. (2007), the correlations between the change in each variable and its initial level were

Table 69: Mean, Standard Deviation and Pearson correlations –Intention model variables initial level and change

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Attitude	5.3134	1.32106	1 184													
2. Social Norm	30.2357	10.80987	0.337*** 138	1 140												
3. Global ESE	5.30	1.399	0.248** 179	0.178* 137	1 189											
4. Strategic ESE	5.2416	1.10402	0.269*** 172	0.220* 133	0.500*** 173	1 178										
5. Administrative ESE	4.6389	1.29932	0.189* 173	0.018 135	0.445*** 175	0.441*** 171	1 180									
6. Financing ESE	4.6198	1.36237	0.073 161	0.142 130	0.371*** 163	0.417*** 160	0.396*** 161	1 167								
7. Intention	6.0997	1.00921	0.516*** 177	0.418*** 139	0.487*** 178	0.391*** 170	0.286*** 172	0.318*** 161	1 183							
8. Change in attitude	-0.637	1.3712	**-0.301***** **170**	-0.120 127	-0.104 166	-0.021 158	0.068 160	0.028 150	-0.091 164	1 170						
9.Change in social norm	-1.6380	9.49758	-0.138 124	**-0.469***** **125**	-0.180* 124	-0.180† 119	-0.039 120	-0.076 115	-0.173† 124	0.192* 119	1 125					
10. Change in global ESE	-0.2707	1.60854	-0.181* 171	-0.198* 130	**-0.520**** **181**	-0.209** 165	-0.241** 167	-0.037 156	-0.254** 170	0.156* 165	0.231* 122	1 181				
11. Change in strategic ESE	-0.2380	1.02741	-0.141† 162	-0.040 123	-0.298*** 163	**-0.521***** **167**	-0.289*** 161	-0.248** 150	-0.169* 160	0.165* 156	0.289** 115	0.400*** 161	1 167			
12. Change in administrative ESE	0.4890	1.43665	-0.069 160	0.123 124	-0.244** 164	-0.205** 158	**-0.608***** **167**	-0.254** 149	-0.167* 160	0.015 154	0.139 117	0.392*** 162	0.403*** 155	1 167		
13. Change in financing ESE	-0.5230	1.45386	-0.050 146	0.027 118	-0.246** 150	-0.201* 145	-0.330*** 147	**-0.455***** **152**	-0.21* 146	0.041 143	0.183 110	0.306*** 149	0.349*** 143	0.476*** 143	1 152	
14. Change in intention	-0.7837	1.09891	-0.061 100	-0.144 81	-0.255* 101	-0.041 98	-0.095 99	0.044 94	**-0.340***** **104**	0.409*** 95	0.377** 75	0.323** 100	0.166 97	0.093 97	0.219* 89	1 104

***. Correlation is significant at the 0.000 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). †. Correlation is significant at the 0.10 level (2-tailed)

checked. These correlations confirmed the presence of the hypothesised negative relationship (as shown in table 69). In addition, according to Cohen's (1992) thresholds, in terms of effect size, these correlations range from medium (0.30) to large (some absolute values above 0.50).

Second, following the approach used by Fayolle and Gailly (2009), the sample was divided into sub-groups representing different initial levels for each variable. While these authors had divided their sample into quartiles, given the limited sample size used here (especially for the intention variable) and in order to achieve meaningful subsets sizes the choice was made to divide the sample into three subsets. The change for each subset was then analysed using t-tests, followed by ANOVA tests of differences in change between the different subsets (table 70). The results of these ANOVA based on the categories representing different levels of initial individual variables confirmed the presence of the negative relationship as the change in the variable was inversely related to the initial level category (table 70).

The two analyses were viewed as complementary in that the correlation coefficients provided an indication of the strength of the relationship, while the analysis by initial level category gave an indication of the absolute levels considered. As both analyses confirmed the presence of the negative relationship hypothesised, it was concluded that the results supported hypotheses 2.2.a to 2.2.d: the evolution of intention model elements appears to be negatively related to their initial level.

Table 70: T-test of mean changes for entrepreneurial perceptions depending on their initial level and ANOVA tests for mean differences in changes

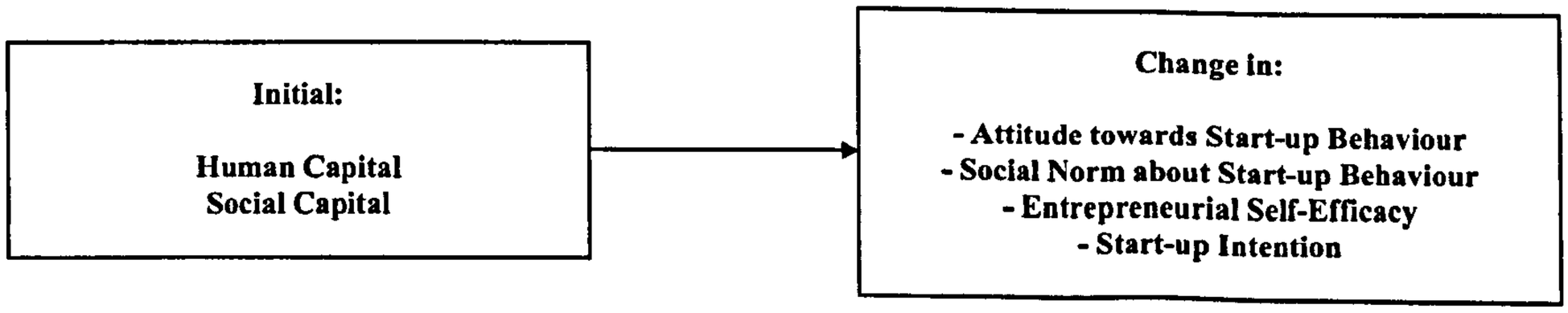
One-sample t-tests and ANOVA	Initial level	N	Mean	Significance
Change in attitude				
Low initial attitude	3.6181	48	-0.174	0.403
Medium initial attitude	5.5000	78	-0.679	0.000
High initial attitude	6.7273	44	-1.068	0.000
ANOVA			**F = 5.200**	**0.006**
Change in social norm				
Low initial social norm	18.4695	41	3.4146	0.017
Medium initial social norm	29.3813	40	-1.5688	0.237
High initial social norm	42.8920	44	-6.4091	0.000
ANOVA			**F = 13.676**	**0.000**
Change in global ESE				
Low initial global ESE	3.29	42	1.0952	0.000
Medium initial global ESE	5.51	101	-0.6139	0.000
High initial global ESE	7.00	38	-0.8684	0.001
ANOVA			**F = 25.535**	**0.000**
Change in strategic ESE				
Low initial strategic ESE	3.7439	41	0.4573	0.005
Medium initial strategic ESE	5.2746	71	-0.2148	0.047
High initial strategic ESE	6.3591	55	-0.7864	0.000
ANOVA			**F = 21.500**	**0.000**
Change in administrative ESE				
Low initial administrative ESE	2.9348	46	1.5580	0.000
Medium initial administrative ESE	4.7250	80	0.4958	0.000
High initial administrative ESE	6.1870	41	-0.7236	0.000
ANOVA			**F = 40.275**	**0.000**
Change in financing ESE				
Low initial financing ESE	2.9054	37	0.1892	0.308
Medium initial financing ESE	4.5403	62	-0.3145	0.115
High initial financing ESE	6.0660	53	-1.2642	0.000
ANOVA			**F = 14.028**	**0.000**
Change in intention				
Low initial intention	4.7500	35	-0.3357	0.075
Medium initial intention	6.1544	34	-0.8382	0.000
High initial intention	6.9429	35	-1.1786	0.000
ANOVA			**F = 5.684**	**0.005**

In the following section the focus turns to assessing whether an effect could also be detected for the person's initial human and social capital elements on the subsequent change in their perceptions towards entrepreneurship.

6.4 Investigative Question 2.3: What is the impact of previous knowledge on the change in a nascent entrepreneur's perceptions towards entrepreneurship?

The analysis undertaken in chapter five revealed that some human and social capital variables could affect the initial level of the different intention model elements. In addition previous exposure to entrepreneurship was found to have some impact on the effect of the entrepreneurial education programmes (Peterman and Kennedy, 2003; Fayolle and Gailly, 2009). Consequently, for the nascent entrepreneurs involved in this study it was checked if human and social capital aspects influenced the changes in intention model elements. Hence the comparisons focussed on previous knowledge and included both general and entrepreneurship-specific variables.

Figure 31: Partial model for proposition 2.3



- **Proposition 2.3.1**: The change in (a) attitude towards start-up behaviour, (b) social norm about start-up behaviour and (c) entrepreneurial self-efficacy and (d) intention between T0 and T1 differs depending on initial human capital.

  - **Hypothesis 2.3.1.a**: The change in attitude towards start-up behaviour between T0 and T1 differs, depending on initial human capital.

  - **Hypothesis 2.3.1.b**: The change in social norm about start-up behaviour between T0 and T1 differs, depending on initial human capital.

- **Hypothesis 2.3.1.c**: The change in entrepreneurial self-efficacy between T0 and T1 differs, depending on initial human capital.

- **Hypothesis 2.3.1.d**: The change in intention between T0 and T1 differs, depending on initial human capital.

- **Proposition 2.3.2**: The change in (a) attitude towards start-up behaviour, (b) social norm about start-up behaviour and (c) entrepreneurial self-efficacy and (d) intention between T0 and T1 differs, depending on initial social capital.

  - **Hypothesis 2.3.2.a**: The change in attitude towards start-up behaviour between T0 and T1 differs, depending on initial social capital.

  - **Hypothesis 2.3.2.b**: The change in social norm about start-up behaviour between T0 and T1 differs, depending on initial social capital.

  - **Hypothesis 2.3.2.c**: The change in entrepreneurial self-efficacy between T0 and T1 differs, depending on initial social capital.

  - **Hypothesis 2.3.2.d**: The change in intention between T0 and T1 differs, depending on initial social capital.

The tests related to these hypotheses involved comparing mean changes for the different categories of human and social capital variables. For each variable, two modalities were present (see section 5.2 for details). However, for three variables some cell sizes fell below the minimum level of 30 recommended for the use of t-tests (Mbengue, 2007). These concerned previous start-up experience, prior start-up training and the presence of entrepreneurial friends. As a result, these three variables were excluded from this part of the analysis.

The results of the t-tests tests related to the changes in intention model elements versus education level, length of work experience, entrepreneurial parents and membership of professional network are summarised in table 71. In addition, the significance level of each change variable's difference from zero (based on one-sample t-test) is indicated below each measure.

What is apparent in this table is that few significant differences in intention model elements changes were identified as being related to human or social capital variables. Significant relationships were detected for the general human capital variables of education (with administrative ESE) and work experience (with global ESE and intention) which indicated positive effects for these characteristics (greater increase or lower decrease in the variable for the higher modality). Concerning social capital, no statistically significant effect could be detected for the presence of entrepreneurial parents. Only a negative one was detected for formal social capital represented by membership of a professional network on change in attitude (being a member induced a greater decrease in attitude towards start-up). Overall, these results therefore provide only limited support for hypotheses 2.3.1.a to 2.3.2.d.

In the last data analysis section of this chapter a check is made on whether the evolution in the intention model elements might be related to the CCI support used by nascent entrepreneurs between the two data collection points.

Table 71: Independent samples t-tests for changes in intention models variables vs. selected human and social capital variables

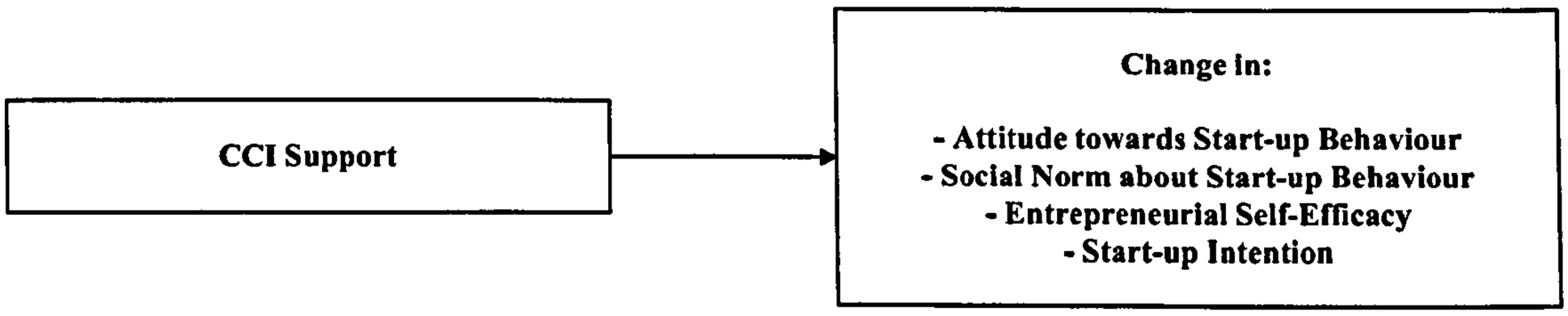
		Change in Attitude		Change in Social Norm		Change in Global ESE		Change in Strategic ESE		Change in Administrative ESE		Change in Financing ESE		Change in Intention	
		Change (number of cases)	Sig. (2-tailed)	Change (number of cases)	Sig. (2-tailed)	Change (number of cases)	Sig. (2-tailed)	Change (number of cases)	Sig. (2-tailed)	Change (number of cases)	Sig. (2-tailed)	Change (number of cases)	Sig. (2-tailed)	Change (number of cases)	Sig. (2-tailed)
Education level	< Bac + 2	-0.641 *** (n = 64)	0.711	-1.9773 n.s. (n = 44)	0.748	-0.3889 * (n = 72)	0.456	-0.1984 n.s. (n = 63)	0.852	0.1935 n.s. (n = 62)	**0.037**	-0.5893 ** (n = 56)	0.671	-0.7162 *** (n = 37)	0.779
	≥ Bac + 2	-0.565 *** (n = 98)		-1.3446 n.s. (n = 74)		-0.2000 n.s. (n = 100)		-0.2294 * (n = 97)		0.6804 *** (n = 97)		-0.4831 ** (n = 89)		-0.7746 *** (n = 61)	
Length of work experience	≤ 10 years	-0.712 *** (n = 74)	0.392	-2.1311 n.s. (n = 61)	0.767	-0.4805 * (n = 77)	**.080**	-0.3288 * (n = 73)	0.281	0.3421 † (n = 76)	0.326	-0.5915 ** (n = 71)	0.630	-1.0350 *** (n = 50)	**.020**
	> 10 years	-0.519 ** (n = 81)		-1.6091 n.s. (n = 55)		0.0235 n.s. (n = 85)		-0.1500 n.s. (n = 80)		0.5758 ** (n = 77)		-0.4718 ** (n = 71)		-0.5054 ** (n = 46)	
Entrepre-neurial parents	No	-0.562 *** (n = 121)	0.249	-0.8904 n.s. (n = 89)	0.110	-0.1774 n.s. (n = 124)	0.353	-0.1724 † (n = 116)	0.300	0.5932 *** (n = 118)	0.202	-0.4709 ** (n =103)	0.404	-0.8143 *** (n = 70)	0.981
	Yes	-0.845 *** (n = 43)		-3.9044 * (n = 34)		-0.4375 † (n = 48)		-0.3587 * (n = 46)		0.2652 n.s. (n = 44)		-0.6932 ** (n = 44)		-0.8083 ** (n = 30)	
Professional network membership	No	-0.479 ** (n = 101)	**0.050**	-1.9000 † (n = 75)	0.587	-0.1905 n.s. (n = 105)	0.675	-0.2424 * (n = 99)	0.858	0.4747 ** (n = 99)	0.851	-0.5591 ** (n = 93)	0.673	-0.7763 *** (n = 57)	0.990
	Yes	-0.880 *** (n = 50)		-0.8716 n.s. (n = 37)		-0.2963 n.s. (n = 54)		-0.2115 n.s. (n = 52)		0.5229 * (n = 51)		-0.4432 * (n = 44)		-0.7734 *** (n = 32)	

One-sample t-test: 2-tailed significance of mean difference from zero *** p = 0.000 . ** p ≤ 0.01. * p ≤ 0.05. † p ≤ 0.10. n.s. = not significant

6.5 Investigative Question 2.4: What is the impact of the use of professional support on the change in a nascent entrepreneur's perceptions towards entrepreneurship?

The objective of this final investigative question was to assess whether any significant differences in the change in perceptions towards entrepreneurship could be linked to the use of CCI support. In order to evaluate this, independent samples t-tests were conducted using the binary variable "use of CCI services".

Figure 32: Partial model for proposition 2.4



- **Proposition 2.4.**: The change in (1) attitude towards start-up behaviour, (2) social norm about start-up behaviour, (3) entrepreneurial self-efficacy and (4) start-up intention between T0 and T1 is more positive for people who made use of CCI support than for those who did not.

  - **Hypothesis 2.4.a**: The change in attitude towards start-up behaviour between T0 and T1 is more positive or less negative for people who made use of CCI support than for those who did not.

  - **Hypothesis 2.4.b**: The change in social norm about start-up behaviour between T0 and T1 is more positive or less negative for people who made use of CCI support than for those who did not.

  - **Hypothesis 2.4.c:** The change in entrepreneurial self-efficacy between T0 and T1 is more positive or less negative for people who made use of CCI support than for those who did not.

- **Hypothesis 2.4.d:** The change in intention between T0 and T1 is more positive or less negative for people who made use of CCI support than for those who did not.

The results reported in table 72 below indicate that statistically significant differences were only apparent in change in administrative ESE (as hypothesised, larger increase for people who made use of CCI support) and in change in intention (contrarily to what had been hypothesised, larger decrease for people who made use of CCI support). When reading them however, it should be remembered that the former refers to the entire sample (started, ongoing and withdrawn), while the latter includes only the ongoing or withdrawn cases.

Table 72: Independent samples t-tests for differences in changes in intention model variables vs. use of CCI support

	Initial Level	N	Mean change	Significance (2-tailed)
Change in attitude				
No use of CCI services	5.4043	94	-0.688***	0.420
Use of CCI services	5.1289	75	-0.520**	
Change in social norm				
No use of CCI services	28.8993	72	-0.7257	0.234
Use of CCI services	32.7500	52	-2.7933*	
Change in global ESE				
No use of CCI services	5.28	105	-0.3143†	0.760
Use of CCI services	5.37	75	-0.2400	
Change in strategic ESE				
No use of CCI services	5.2367	94	-0.2606*	0.845
Use of CCI services	5.2882	72	-0.2292†	
Change in administrative ESE				
No use of CCI services	4.6281	95	**0.2772†**	**0.028**
Use of CCI services	4.5417	72	**0.7685*** **	
Change in financing ESE				
No use of CCI services	4.5298	84	-0.6310***	0.371
Use of CCI services	4.8582	67	-0.4179*	
Change in intention				
No use of CCI services	5.8729	59	**-0.6144*** **	**0.063**
Use of CCI services	6.0625	44	**-1.0227*** **	

One-sample t-test: 2-tailed significance of mean difference from zero:
*** p = 0.000 . ** p ≤ 0.01. * p ≤ 0.05. † p ≤ 0.10.

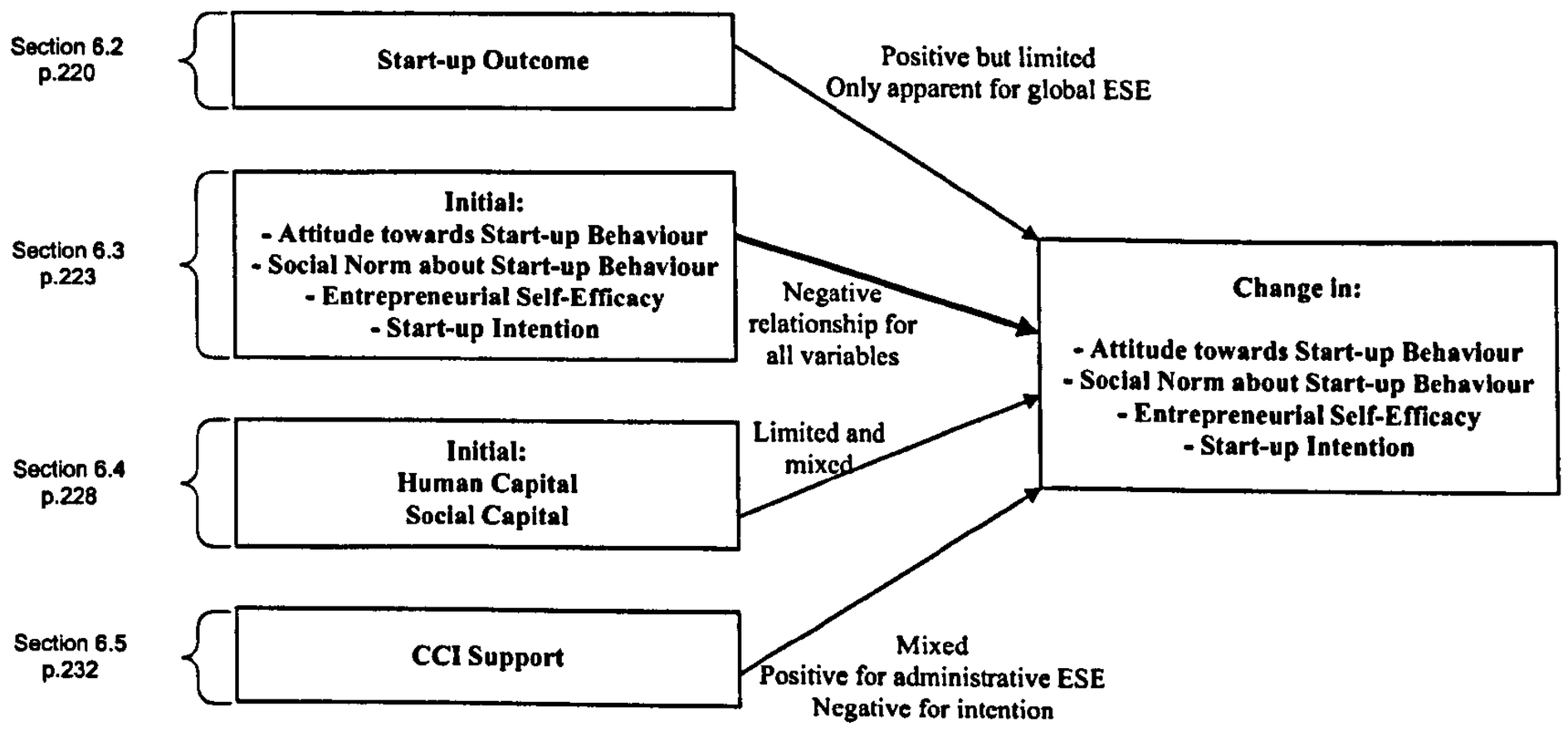
Overall, only hypothesis 2.4.c (related to change in ESE) received limited support. Tests for the other hypotheses indicated either no relationship (for changes in attitude and social norm) or, in the case of hypothesis 2.4.d (related to change in intention), a relationship opposite to the one that been hypothesised.

In the next section, the interpretation and implications of the results presented in this and the three preceding sections are discussed.

6.6 Discussion of chapter 6 results

The above tests were undertaken with the objective of moving the analysis beyond a project-level analysis to an individual-level one. Attrition rates and sometimes small final sample sizes warrant caution in discussing these results. They are nonetheless interesting to interpret for the theoretical insights they bring and the practical implications they have for French business support actors. A summary of the findings is presented in figure 33 below.

Figure 33: Summary of findings: nascent entrepreneur level



Starting with the general change in intention model variables, the findings related to individuals whose activity had started came as a surprise. Only administrative ESE (perceived ability in planning the project and handling the formalities associated with it) recorded a statistically significant increase. Attitude, social norm, strategic ESE (perceived ability in defining the project's strategic dimensions) and financing ESE (perceived ability in obtaining financing) all exhibited statistically significant decreases. Changes for people whose projects had been withdrawn were more in line with expectations (negative) except for social norm and strategic ESE for which the change was not statistically significantly different from zero and for administrative ESE for which an increase was recorded.

Overall, only the evolution in global ESE differed significantly between the two groups (started or withdrawn) and this difference was in the expected direction (less negative change for people whose projects were started).

At first sight, these results seem to indicate that the impacts of a nascent venture experience on individuals are similar regardless of the project outcome. However, it is here proposed that the reasons for these apparently similar changes differ between the two groups. Both groups experienced what may be seen as something of a 'reality check'. However the confrontation with reality went further for people whose projects materialised than for those whose projects did not. Thus for the started group, enactive mastery described by Bandura (1977) may carry a stronger weight in influencing the evolution in the different variables than for the withdrawn one.

This may be reflected in changes in the items composing the various constructs. For example, consider the changes in the three components of attitude reported in table 73:

Table 73: Evolution in individual items composing attitude vs. project outcome

	Individuals reporting started outcomes (n_s)	Individuals reporting withdrawn outcomes (n_w)
I am ready to make important personal sacrifices to become an entrepreneur ($n_s = 72$; $n_w = 91$)	-1.2083***	-0.9121***
Among all possible professional options, I prefer to be an entrepreneur ($n_s = 70$; $n_w = 86$)	-0.6000**	-0.6977**
I would rather own my own business than earn a higher salary being employed by someone else ($n_s = 72$; $n_w = 88$)	-0.3750	-0.7727**

One-sample t-test: 2-tailed significance of mean difference from zero *** $p = 0.000$. ** $p \leq 0.01$.

The differences in changes between the two groups are not statistically significant. However, they could give a hint to the fact that for individuals who carried their project through, awareness of the personal sacrifices involved in starting an independent activity carries a greater weight in the decrease in attitude than for people who decided to withdraw. On the other hand, the decrease in willingness to give up salary advantages in order to have their own activity is statistically significant only for people in the withdrawn group but not for those in the started group. Thus it can be proposed that the less

favourable attitude reported by people in the started category was influenced by their projects not delivering the expected personal satisfaction, while the les favourable attitude reported by people in the withdrawn category was more driven by financial opportunity cost calculation.

People in the started group had more positive initial levels in perceptions towards entrepreneurship than those whose projects were withdrawn (table 68). This contributed to their higher initial start-up intention and in turn increased the likelihood of their project getting launched (as discussed in chapter five). Still, confrontation with the reality of the start-up process may have led them to reconsider their evaluations of the intention model elements. Only one difference in change between the two groups was found to be statistically significant: global ESE (a bigger decrease for people whose projects were withdrawn). For the started group, change in global ESE is not significantly different from zero, while for the withdrawn group it is negative. This may reflect the fact that, as suggested by the theory, the failure to carry their project forward may have induced a degree of discouragement and a reduction in their perceived self-efficacy. People who saw their projects come to fruition started with higher global perceived ability to start their activity (higher global ESE) which meant more limited scope for improvement. However, their success in carrying the project forward comforted them at that high level.

A closer look at the different ESE dimensions suggests that not all of them were impacted in the same way. Strategic ESE recorded a decrease which was statistically significant for the started group but not for the withdrawn group. Though independent samples t-test only detect a weak significant (at the 0.1 level) difference for the change in ability to evaluate a project's risk, the details provided in table 74 indicate that for individuals who carried their projects through, all four items composing that construct recorded statistically significant decreases, while for the others only two out of four did and this to a lesser degree.

Table 74: Evolution in individual items composing strategic ESE vs. project outcome

	Individuals reporting started outcomes (n_s)	Individuals reporting withdrawn outcomes (n_w)
Perceived ability to identify a product or service idea ($n_s = 69$; $n_w = 92$)	-0.4783**	-0.3587†
Perceived ability to evaluate a project's risk ($n_s = 70$; $n_w = 91$)	-0.3143†	0.0989
Perceived ability to identify relevant information about markets and clients ($n_s = 67$; $n_w = 91$)	-0.3881*	-0.2747†
Perceived ability to identify relevant information about competitors ($n_s = 67$; $n_w = 90$)	-0.3134†	-0.0889

One-sample t-test: 2-tailed significance of mean difference from zero ** $p \leq 0.01$. * $p \leq 0.05$. † $p \leq 0.1$

One possible explanation for this is that some people in the withdrawn category may not have gone far enough in the process to have got enough information to re-assess their entrepreneurial self-efficacy in relation to evaluating the strategic aspects of a project. Similarly, the lack of evolution in social norm for the withdrawn group may reflect a lower 'test' of the expected support of their environment in the context of actual start-up. Hence, the stage reached by the project development may have an impact on the reassessment undertaken by the individuals of the different antecedents of intention.

The specific result found for administrative ESE also warranted further investigation (table 75). In the case of started projects a significant increase was recorded in ability to "plan the start-up steps" suggesting that some re-evaluation in their ability in that area took place for that group.

Table 75: Evolution in individual items composing administrative ESE vs. project outcome

	Individuals reporting started outcomes (n_s)	Individuals reporting withdrawn outcomes (n_w)
Perceived ability to complete the administrative formalities linked to the creation of an organisation ($n_s = 67$; $n_w = 88$)	0.1194	0.0909
Perceived ability to select a legal status for their activity ($n_s = 68$; $n_w = 90$)	0.5441*	0.5889**
Perceived ability to plan the start-up steps ($n_s = 69$; $n_w = 91$)	0.6232**	0.1429

One-sample t-test: 2-tailed significance of mean difference from zero ** $p \leq 0.01$. * $p \leq 0.05$.

It can also be seen that both the started and withdrawn groups reported an increase in their ability in "selecting a legal status for their activity". This topic was covered during the half-

day session prior to which the individuals were initially surveyed and the positive change in this variable may thus be a positive effect of the information delivered then.

In addition, one element in the French context in which this study took place may contribute to explaining this effect. In January 2009, a new 'auto-entrepreneur' status (discussed in chapter 2) was introduced to simplify registration for people who wanted to start an independent activity. Following this introduction, a considerable communication effort was undertaken by French authorities to promote the simplification in the registration options offered to French nascent entrepreneurs. This may explain some of the increase in the legal status selection variable. Looking at the telephone answers provided by respondents from the 325-sample identified as having started their activity, it appears that over 40% of them took advantage of that status so its introduction was particularly relevant for the individuals composing this sample.

The results presented in section 6.3 indicate that getting involved in a start-up project seems to have a tempering effect both on initially low and initially high levels of the antecedents of start-up behaviour variables. Specifically, the same effect as that detected by Cox et al. (2002), Souitaris et al. (2007) and Fayolle and Gailly (2009) was present in the data analysed here: people starting from lower levels in the variables recorder larger increases / lower decreases than those who started from high initial levels (tables 69 and 70). It therefore seems that experience in a start-up project produces a similar effect to that of entrepreneurship education programmes: it contributes to reassessing the antecedents of start-up behaviour to possibly more realistic levels (Cox et al., 2002). That said, one year after the initial survey, people whose projects were started still exhibited significantly higher global ESE, administrative ESE and financing ESE than those whose projects did not materialise (table 76).

Table 76: Antecedents of intention – Time 1 level by project outcome

	Outcome	N	Mean	Sig. (2-tailed)
Attitude 1	Started	71	4.7230	0.184
	Withdrawn	89	4.3745	
Social Norm 1	Started	64	27.1484	0.494
	Withdrawn	79	28.4525	
Global ESE 1	Started	71	**5.65**	**0.000**
	Withdrawn	93	**4.52**	
Strategic ESE 1	Started	70	5.0179	0.523
	Withdrawn	92	4.9103	
Administrative ESE 1	Started	69	**5.3237**	**0.019**
	Withdrawn	91	**4.8498**	
Financing ESE 1	Started	70	**4.6214**	**0.000**
	Withdrawn	88	**3.7955**	

The results concerning the effects of prior knowledge also deserve some discussion. General human capital appears to have a positive effect on the change in some of the variables. For example, the increase in administrative ESE is higher for people with higher education levels. Similarly, people with longer work experience report less negative change in global ESE and intention than those with less experience. In fact, while not all these differences in changes are statistically significant, for all measured variables people with greater work experience exhibit lower declines / larger increases than those with less experience. This may suggest that these more experienced individuals have a more accurate initial evaluation of what starting a company entails.

Of the two social capital variables analysed, only membership of a professional network appeared to have an impact. It resulted in a greater decrease in attitude, hence a larger reassessment to less favourable attitudes towards start-up. In chapter five, membership of a professional network was found to be positively associated with initial level of attitude. This last result suggests that when confronted with reality this favourable attitude towards start-up starts to be questioned by the nascent entrepreneurs.

Last but not least, only two variables appeared to be impacted by the use of CCI support. Administrative ESE was in a positive way. Use of CCI support was earlier (chapter five)

found to be related to education level and education level was found to be positively associated with increase in administrative ESE. So these findings may be linked. Looking in more detail at the underlying items composing administrative ESE (table 77) it seems that this difference comes primarily from the change in perceived ability to plan the start-up steps and to a lesser extent from the ability to select a legal status. Thus, it seems that the benefits that nascent entrepreneurs draw from the use of CCI support include better understanding of the planning of their projects and of the various legal options offered to them.

Table 77: Evolution in individual items composing administrative ESE vs. use of CCI support

	No use of CCI services (n_n)	Use of CCI services (n_y)	Independent samples t-test (2-tailed sig.)
Perceived ability to complete the formalities linked to the creation of an organisation ($n_n = 100$; $n_y = 74$)	0.0500	0.2973	0.350
Perceived ability to select a legal status for their activity ($n_n = 101$; $n_y = 75$)	0.4455*	0.8800***	0.152
Perceived ability to plan the start-up steps ($n_n = 103$; $n_y = 76$)	0.1359	0.7763***	**0.018**

One-sample t-test: 2-tailed significance of mean difference from zero *** p = 0.000 . * p ≤ 0.05.

People who used CCI services reported larger decreases in future start-up intention than those who did not. It should be remembered that this part of the analysis concerns only people whose project had not been started (either withdrawn or still being worked on). Hence, the interpretation that is made of this difference is that the people who used CCI support but decided not to go through pushed the "reality check" further than those who stopped after the information session. Hence, the disappointment from not having materialised the project may have been stronger for these people who undertook extra steps with a view to starting their projects. This greater disappointment may be reflected in the larger decrease in start-up intentions.

Overall the results presented in this chapter confirm the usefulness of intention-models in assessing individual-level changes. From a theoretical standpoint, they may contribute to

an explanation of some of the contradictory findings found in the literature concerning the impact of nascent ventures experiences for future entrepreneurial undertakings (Davidsson and Honig, 2003; Samuelsson, 2004; Kim et al., 2006). Not all experiences result in increases in the identified antecedents of start-up behaviour. In fact, according to the above results, in the majority of cases they result in decreases in some of these antecedents. In addition, these results confirm the importance of controlling for the type of previous experience incorporated in the analysis. For example for this sample, people whose projects got withdrawn experienced a large decrease in global ESE, i.e. in their global perceived ability to start a business, while people whose projects got started experienced no significant change in global ESE. Being able to assess if the previous start-up experience was "positive" or "negative" may contribute to a better understanding of their impact.

For people starting with low levels in the different antecedents of start-up behaviour, undertaking some steps to gather information about company start-up seems to have a positive effect on these antecedents which may contribute to increase future start-up intentions. However, for those coming with high expectations, the confrontation with reality may be somewhat harsh. What this study cannot answer is if this reappraisal will ultimately drive some people who launched their projects out of business.

From a practical standpoint, the special case of administrative ESE seems to indicate that setting up a firm in France may be administratively less complicated than is perceived by most people. As discussed in the literature review, several initiatives have been launched in the country over the past decade and they seem to have produced some positive effects. However, the initial perception of nascent entrepreneurs seems to remain one of difficulty in mastering planning and in the choice of legal status which suggests that more communication effort may be needed for the simplification message to be heard.

Finally, depending on the goal pursued by support services, these results may be interpreted in different ways. The question that was posed by Cox et al. (2002, p.14) about the actual goals pursued by entrepreneurship educators also seems very topical here. Do start-up advisors see their objective as "bursting the bubble" of over-confident nascent entrepreneurs or on the contrary as "building steam" with the risk of sending too optimistic a signal? The pre-study discussions that took place with CCI advisors suggest that they see their role as both. If this were confirmed, it would be all the more important for them to properly assess the starting point of the individuals they advise in order to tailor their interventions accordingly.

6.7 Summary of chapter 6

Overall the results presented in this chapter confirm the presence of individual-level effects resulting from nascent ventures experiences that warrant further investigation. Confrontation with the reality of getting engaged in the development of a start-up project seems to bring a reassessment of perceptions linked to entrepreneurship to more realistic levels. In this sense the effects identified here are similar to those identified for entrepreneurship education programmes. Some human capital and social capital effects on the changes in perceptions towards entrepreneurship are also apparent here. However, in contrast to student-based studies, no significant effect could be detected for exposure to entrepreneurial parents on the evolution in the different variables.

Finally, limited differentiated effects were found between people who made use of CCI services and those who did not. The larger decrease identified in future intention was interpreted as a more pronounced confrontation with reality for people who used CCI services and later decided to withdraw than for those who decided to withdraw shortly after the information session. These findings also invite support actors to be clear about the objectives they are pursuing and provide possibilities for developing support actions targeted at individuals entering the process with different entrepreneurial perceptions.

The next chapter represents the conclusion of this thesis whereby the findings from the three data analysis chapters are brought together. Theoretical, methodological and practical contributions of this thesis are first considered. The limits of the work presented here are then discussed and finally directions for future research proposed.

7. Conclusion

In the introduction chapter, a number of important research gaps were identified. These gaps, which are summarised below, provided the research issues that this thesis has addressed:

- The need to corroborate the intention-behaviour link often taken for granted by entrepreneurship scholars but rarely actually tested (Shook et al., 2003);

- The use of field data, including started projects as well as withdrawn projects, to generate new findings (Van Auken, 1999; Shane and Delmar, 2004) and to provide a better understanding of the development of reproducing rather than just innovative venture opportunities (Samuelsson, 2004);

- The analysis of the interactions between different stakeholders during the nascent venturing phase with a particular focus on professional support (Gartner and Carter, 2003; Cuzin and Fayolle, 2004);

- The implementation of study designs that enable the follow-up of entrepreneurial project development (Davidsson, 2005).

In addition, the recent application of intention-based models in a longitudinal manner (Souitaris et al., 2007; Fayolle and Gailly, 2009) was identified as a method that could be transferred to nascent entrepreneurs in order to understand the impact that their involvement in a nascent venture project has on their perceptions towards entrepreneurship.

Having in mind the objective of filling the gaps cited above, this concluding chapter brings together the findings of the analysis undertaken at both the project and the individual levels. The contributions made by the thesis are first discussed. Following this, its limitations are reviewed. Finally, directions for future research are proposed.

7.1 Contributions from the thesis

The general research problem for this study was presented in chapter one as:

What are the determinants of the outcomes of nascent venturing processes in terms of

(1) started vs. withdrawn projects and

(2) changes in individuals' perceptions towards entrepreneurship?

Two research questions were derived from this main research problem, each representing a different level of analysis. The first referred to the project level and the second to the individual level. When assessing the contributions of this thesis it should be remembered that the analysis was undertaken with a sample of individuals engaged in start-up information gathering. As a result, the interpretation of the results concerns what factors lead to differentiated outcomes within a group of aspiring entrepreneurs. Contributions from the thesis are reviewed below, starting with the theoretical ones then turning to the methodological ones and finally the practical ones.

7.1.1 Theoretical contributions

The first research question studied was: **What factors determine whether a nascent project gets realised?** One major hoped-for contribution of this thesis is that it corroborates the presence of the intention-behaviour link in an entrepreneurial context and provides insights into it. Hence, this thesis answers Shook et al.'s (2003) call by confirming the validity of the intention-based entrepreneurship stream.

Previous entrepreneurship studies based on intentional frameworks have been mainly undertaken on student samples. These generally have bounded and often short time frames which make it difficult to assess whether the ultimate goal – the start-up of an independent venture - has been attained. (Kolvereid, 1996b; Tkachev and Kolvereid, 1999; Krueger et

al., 2000; Autio et al., 2001; Souitaris et al., 2007; Boissin et al., 2009b; Fayolle and Gailly, 2009; Linan and Chen, 2009). In turn, this makes it hard for them to observe and assess the full nascent entrepreneurial process. Such studies have therefore not been in the position to test the full intention-based model. This thesis, which is based not on student behaviour but on observations of actual would-be entrepreneurs over time, directly addresses this gap.

The application here to a group of nascent entrepreneurs does confirm the topicality of intention-based entrepreneurship research. Based on an adaptation of the theory of planned behaviour (Ajzen, 1991; Krueger and Carsrud, 1993) it had been hypothesised that both intention and entrepreneurial self-efficacy would be related to actual start-up. Using data collected at two points separated by one year, it was shown that initial start-up intention but, contrarily to what the theory predicts, not the person's perceived ability in starting their activity or handling actions to that effect (entrepreneurial self-efficacy), contributes directly to explaining one-year later started outcomes. In fact, the results presented here suggest that the effect of entrepreneurial self-efficacy on start-up outcomes is mediated by intention.

Using a four-dimension operationalisation of entrepreneurial self-efficacy (ESE), Kolvereid and Isaksen's (2006) had failed to detect any significant relationship between ESE and start-up outcome with their sample of self-employed individuals in Norway. The analysis undertaken in chapter five using a three-dimension ESE measure reaches the same overall conclusion. However, the results presented here add to Kolvereid and Isaksen's (2006) findings by showing that, compared to a model including only intention as a predictor of start-up outcome, another one including intention and the three entrepreneurial self-efficacy dimensions has a better classification power. This suggests that there are likely to be more complex effects taking place that require further investigation.

Follow-up support provided after the initial information session by the network contacted by the nascent entrepreneurs in this study was shown to have a direct positive relationship

with the start-up rate, which is opposite to what had been suggested by Davidsson and Honig (2003) in their study based on Swedish data. However, as suggested by Storey (2003), the results presented here also showed the presence of some self-selection effects for the use of this follow-up support. Specifically, it was shown that, among the individuals who attended the information session, those who followed through with personal support had a higher level of education, were members of professional networks but were currently out of work.

The results related to intention indicate that its three theoretically-hypothesised antecedents (attitude, social norm and entrepreneurial self-efficacy), including the controversial social norm (Armitage and Conner, 2001), all contribute to explaining it. In terms of their relative weight, global entrepreneurial self-efficacy, i.e. one's general perceived capability in starting a business, seems to be the highest contributing element. It is followed by attitude and social norm which were found to contribute to the explanation of intentions in similar proportions. As far as entrepreneurial self-efficacy is concerned, while the results confirm its generally accepted positive role on intention, when it comes to investigating which entrepreneurial self-efficacy sub-dimensions contribute most, the results are less clear-cut. The role of financing ESE was apparent, but those of strategic and administrative ESE less conclusive. This aspect will be addressed in the section referring to opportunities for future research. Turning to attitude towards start-up, the results confirm the importance of opportunity costs issues when investigating entrepreneurial involvement for working adults facing several career alternatives (Amit et al., 1995; Gundry and Welsch, 2001; Cassar, 2006). These do influence entrepreneurial intention. As regards social norm, within the ongoing debate concerning its role in explaining intention, this study supports those who view it as significant (Kennedy et al., 2003; Kolvereid and Isaksen, 2006; Carr and Sequeira, 2007; Souitaris et al., 2007; Fayolle and Gailly, 2009).

This thesis also confirms the relevance of bringing together influences from different theoretical backgrounds in order to generate new findings. The models tested (figures 21 and 22) while primarily relying on an intention framework derived from the theory of planned behaviour (Ajzen, 1991), also included elements imported from approaches considering human and social capital as resources for the new venture (Davidsson and Honig, 2003; De Clercq and Arenius, 2006; Kim et al., 2006), as well as some from the more process-oriented view of entrepreneurship relying on gestation behaviours analysis (Gatewood et al., 1995; Carter et al., 1996; Gartner and Carter, 2003).

While the overall influence of human and social capital was less pronounced than had initially been expected, the results nevertheless suggest that different aspects of human and social capital may play varying roles throughout the creation process. For example, the education level appears to affect both initial attitude and start-up intention negatively, which seems to contradict those associating it positively with entrepreneurial activity (De Clercq and Arenius, 2006; Brooksbank and Thompson, 2008). However, that negative effect is not apparent in the transformation of intention into start-up. In fact, while the results presented could not decisively confirm this, it is proposed that the education effect may actually turn positive as the project's development progresses (Henley, 2007).

Turning to social capital, none of the three variables considered here (presence of entrepreneurial parents, presence of entrepreneurial friends and membership of a social network) exhibited a significant direct link with intention. However, the presence of entrepreneurial friends played a positive role in the transformation of projects into actual start-ups. No effect on start-up outcomes could be detected for the presence of entrepreneurial parents which goes against some existing results (Delmar and Davidsson, 2000; Davidsson and Honig, 2003) but concurs with that of Kim et al. (2006). It was proposed that for the individuals surveyed here this parental effect may however have come into play earlier in the process by enabling them to consider entrepreneurship as a

realistic career option. Nor was an effect found for membership of a professional network on start-up outcome which seems to contradict the results of Davidsson and Honig (2003). Membership of a professional network was however found to be associated with a more favourable initial attitude towards start-up, hence having an effect on one antecedent of intention.

The incorporation of a count of gestation behaviours in the analysis also enabled the identification of the project's advancement as an important control variable to be included in such longitudinal intention-based analyses. In addition, controlling for a person's professional status enabled the detection of the presence of a necessity push factor which contributed to explaining both intention and start-up outcome. Specifically, as shown by Brooksbank and Thompson (2008) in the UK, people who were out of work were here found to exhibit stronger initial start-up intentions and to be more likely to end up launching their project. However, while these authors had identified people who had completely withdrawn from the job market as the most likely to be nascent entrepreneurs, the analysis presented in chapter five suggests that, for this sample, the ones who have been unemployed for a short period (less than 12 months) actually seem to be most likely to carry their projects through to start-up.

Finally, concerning the generally reported negative association between being a woman and entrepreneurship (Allen et al., 2008), no effect was here found on initial intention levels, which was interpreted as a possibility that the effect might have played a role earlier, during the self-selection among the women choosing to attend the information session. However, a negative effect was indeed identified on transforming a project into an actual start-up.

The second research question studied was: **How does a nascent venture experience affect the individuals involved in it?** Overall, the general answer is that it brings a realignment of their entrepreneurial perceptions to more realistic levels.

As a consequence, the results presented here shed some light on recent findings suggesting a negative effect for previous start-up experience on the likelihood of getting involved again in a start-up project (Kim et al., 2006), or on bringing a project to launch in highly dynamic markets (Newbert, 2005). It was here demonstrated that in the majority, after a nascent venture experience, individuals exhibit entrepreneurial perceptions which are generally less positive than when they engaged in the process. In addition, it was shown that started ventures could not systematically be equated to positive experiences theoretically expected to increase the favourableness of entrepreneurial perceptions via enactive attainment (Bandura, 1986). Hence, the results presented suggest that such a positive assumption may be overly simplistic in entrepreneurial contexts as people whose activity was launched exhibited decreases in several entrepreneurial perceptions. This contributes to explaining Kim et al.'s (2006) and Newbert's (2005) findings that previous start-up experience is not always found to have a positive effect on later entrepreneurial undertakings.

The finding that perceptions are revised downwards in the year following the initial survey at the information session holds for most of the analysed perceptions regardless of the project's fate (i.e. whether it culminated in a started or a withdrawn outcome). One exception concerned some topics that were covered during the half-day information session attended by the individuals surveyed. Specifically, a positive change was recorded for the respondents' perceived capability in dealing with administrative matters (administrative ESE). It was proposed that, in addition to reflecting the impact of the information session attended by all respondents, this positive change may partly be linked to the specific French context in which the study took place. Specifically, the simplification of registration procedures for some individual companies (within the turn-over limits discussed in chapter one) and the communication campaign that accompanied this change may have contributed to altering this perception in a positive way.

In addition, the influence of the project outcome (started or withdrawn) on the changes in perceptions was only apparent for the change in individuals' general perceived ability in starting a business (global ESE) but not on any of the other entrepreneurial perceptions variables. Specifically, individuals whose projects were started recorded no statistically significant change in their self-perceived ability to start a business, while those whose projects were withdrawn recorded a decrease in it.

In this study, during the second data collection which took place one year after the first one, people who started from lower levels of attitude, social norm, entrepreneurial self-efficacy and intention expressed perceptions higher than their initial level. On the contrary, people who started from higher levels in these perceptions saw a decrease in level between the two dates. Thus, as was the case for student samples (Souitaris et al., 2007; Fayolle and Gailly, 2009), it was here shown that the impact of nascent venture experiences on the individuals involved in them depends on "where they start from". For people starting from less favourable levels of attitude towards start-up, social norm and entrepreneurial self-efficacy the confrontation with reality seems to produce a demystification effect and leads them to revise their entrepreneurial perceptions upward. On the other hand, those starting from high levels seem to experience something of a reality check that may bring their self-assessments down to a more realistic level. The practical implications of this finding are discussed in sub-section 7.1.3 below.

Concerning the influence of the use of follow-up support on these changes on perceptions, the results showed that it produced most effects on entrepreneurial self-efficacy related to administrative issues. In particular, it was shown the increase in perceived ability to plan the project was higher for people who used follow-up support after the information session than for those who did not. In addition, among the people who did not launch their projects, the ones who used this support exhibited a more pronounced decrease in future start-up intentions. This was interpreted as another reality check effect in that the people who

decided to withdraw their project after having taken professional advice from the CCI did so on more informed grounds than the ones who withdrew without this advice.

With regards to human capital variables, higher educational level was found to be positively related to change in administrative ESE and work experience to changes in both global ESE and intention. On the social capital side, a negative effect on attitude was found for membership of a professional network. No effect could be detected for the presence of entrepreneurial parents.

Altogether, concerning the general problem set for this thesis of identifying determinants of project- and individual-level outcomes of nascent ventures, it can be said that the three theoretically-derived antecedents of intention (attitude, social norm and entrepreneurial self-efficacy) were found to influence it in a positive way. In turn, intention, but not entrepreneurial self-efficacy, had an impact on the project-level outcome in terms of the project's fate. Support provided by CCI counsellors was identified as having a positive link with the likelihood of start-up. In addition, the number of gestation behaviours undertaken prior to the initial survey was consistently positively associated with started projects. Furthermore, a higher likelihood of projects run by people out work getting launched (necessity push effect) and a lower likelihood of women-led projects getting launched (gender effect) were also identified.

In terms of individual-level outcomes, the most pronounced finding was that the nascent venture experience resulted in something of a reality check. This was illustrated by the finding that the initial level in the intention-model's variables was here inversely related to the reassessment of entrepreneurial perceptions taking place. The methodological implications of this thesis are now discussed.

7.1.2 Methodological implications

While a lot of entrepreneurship research seems to adopt a positivist stance (Grant and Perren, 2002), the approach adopted here was an interpretivist one. Hence, while it relied on a general hypothetico-deductive framework, when some results appeared to warrant more detailed investigation the data were scrutinised to look for explanations related to the specific situation considered. For example, the realities embedded within the withdrawn outcomes or the perceptions of previous entrepreneurial experiences were both discussed in detail to help understand some of the findings. This reflects the view that if one wants to study human beings as strategic actors of the entrepreneurial process, not all decisions will be explainable in a positivist manner (Emin, 2003). With the increase in studies involving individuals from different cultural backgrounds, it is here suggested that this interpretivist stance is the best suited to enable scholars to comparing and their different findings, especially given the recent call for more replication studies (Brännback et al., 2006).

Several suggestions were made in chapter four to improve measurement of the different constructs considered here. In particular, adding to recent publications addressing measurement issues in entrepreneurship research (Linan and Chen, 2009; McGee et al., 2009; Crook et al., 2010), it was suggested that the scales used by entrepreneurship scholars require further adaptation for use with the type of small, and in the majority reproducing, projects involved here which involve lower financial and human resources than innovative projects. For example, only a minority of people surveyed here are concerned with the possibility of attracting outside investors, something which appears in many entrepreneurial self-efficacy scales. To a lesser extent, approximately a quarter of the respondents do not consider human resource management issues, also present in most entrepreneurial self-efficacy scales, as important for them. The implications of these findings are discussed below in the opportunities for future research.

It is hoped that such adaptation to small scale projects will shed some light on some puzzling issues identified here. For example, compared to the model including only intention as a predictor of start-up outcome, the addition of the three ESE dimensions, even though no individual dimension had a statistically significant regression coefficient, improved the overall percentage of correctly classified cases for both started and withdrawn outcomes. This was not the case when the global ESE measure was used and it therefore hints that there may be some information to be captured there once the operationalisation of the constructs has been improved.

Finally, the analysis presented here also illustrates the information that may be generated by using intention models in a longitudinal manner not only to undertake project-level analyses, but also to understand the changes that such ventures induce at the individual level. Such longitudinal design may, at least on a small scale, be greatly facilitated by implementing a partnership with an organisation in contact with entrepreneurs. While this approach introduces biases (Katz and Gartner, 1988; Davidsson, 2005), the richness of the data that may be obtained as shown by the analyses presented in this thesis and in other analyses such as, for example, those by Chrisman et al. (2005) or Kessler and Frank (2009) makes up for these biases. Hence, while being able to identify a statistically representative sample of nascent entrepreneurs is certainly preferable, the impossibility to identify such a sample should not deter scholars from undertaking specific investigations of the process. In addition, following this study it is felt that such an approach can result in a better understanding of the effect of professional support as called for by existing scholars (Cuzin and Fayolle, 2004) as it enables a level of detail not accessible to larger standardised surveys.

7.1.3 Practical contributions

The practical contributions of this study are related to the design of entrepreneurship support programmes, both in terms of tailoring the programme to the actual participants and of following-up adequately with these participants.

For such programmes, this research highlights the heterogeneity of the people coming to them for advice and provides possibilities for differentiating between them. The CCI counsellors with whom the study was undertaken indicated that when people called them up for information about start-up they were initially directed towards the half-day information session. However, this may not be appropriate for everybody. In fact, the first questionnaire included a question regarding the individuals' expectations and needs in terms of start-up support (appendices 2 and 3, question 40). Answers to this question showed that the expectations ranged from very broad ones such as "understanding the steps necessary for starting a company" to very precise ones such as "confirming the financial viability of the project" or "helping me select a legal status". Some mentioned very specific points of information (possible grants, fiscal and legal information) while others were looking for follow-up support in designing their project. Being able to assess whether the needs of the respondent are general or specific could provide guidance as to whether the information session is the right solution for them.

One aspect identified in this study that may help support agencies differentiate among the people contacting them is the number of preparation actions (gestation behaviours) undertaken prior to contacting the support agency. In several models presented here, the number of such behaviours is consistently identified as an important factor influencing both intention levels and subsequent start-up. Gestation behaviours may enable the support actors to assess where the people contacting them stand in the start-up process and then adapt the offer made to them. For example, for people identified as being "well advanced" in the process (having accomplished a minimum number of gestation behaviours for

example) providing them directly with a meeting with a counsellor may be more productive than having them attend the general information session.

The changes in entrepreneurial perceptions have been here identified as being related to the initial level of these entrepreneurial perceptions. This also provides some guidance on possibilities for tailoring the support to the needs of individuals. The actions of the support actor are more likely to have a positive impact on people starting from "low" levels for the variables considered. As a result, assessing where nascent entrepreneurs start from, in terms of entrepreneurial perceptions, could provide guidance as towards which people which training programmes should be directed (with, for example, the objective of increasing their entrepreneurial self-efficacy). For those exhibiting highly favourable attitudes towards start-up, making sure that these remain realistic could also be important in order to avoid too strong disappointment after the ventures are launched. Otherwise, (though this is beyond the scope of the current study) it could be that these new entrepreneurs run the risk of reassessing their perceptions downwards to an extent that would possibly impact their businesses.

One important aspect identified here is the presence of a self-selection effect, apparent for people who decide to make use of the support offered to them beyond the information session, an effect which was found to be related to the educational level of the individuals, their membership of a professional network and their professional status. The information session seems to deter people with lower educational attainment from seeking further support. It was suggested that this may be related to the format of the information session, which could be seen as business-plan driven and getting into a level of legal detail that may be discouraging for some participants. Given the positive impact identified for the provision of support on actual start-up rates, this is important if the objective is to encourage projects from people with different educational levels. Furthermore, the fact that professionally active individuals also make less use of CCI support after the information

session may be due to their difficulty in freeing up time during business hours to meet with a counsellor. While the counsellors suggested that they also interact with nascent entrepreneurs using email and telephone discussions, this communication channel may need to be reinforced or presented more clearly during the information session.

During the telephone interviews undertaken after one year, some respondents indicated that they felt that the information session did not relate to their project because it concerned only projects well beyond the scale they were considering for theirs. That may also have made people interested in self-employment activities feel that the proposed support was not appropriate for their project. Given the proportion that these projects represent among French start-ups (as shown by the overwhelming majority of sole proprietorships among start-ups discussed in chapter two), revising the content of the information session to answer to these people's needs may increase the follow-through rates for support.

In addition, professional advisors should be clear about the objective they set for their support. In this study, when looking at the perceptions most impacted by the use of support, administrative entrepreneurial self-efficacy stands out. Handling administrative matters is a pre-requisite to start-up and one that may deter some people from undertaking company creation. However, counsellors may ask themselves if this is the only aspect that they want to have a positive impact on and if not, how they could remedy this. For example, though a post start-up follow-up would be needed to confirm this, it may be argued that other aspects, such as strategic entrepreneurial self-efficacy, may carry information important for the viability of the business started. In this case, making sure that support interventions have a broader positive impact than just that on the administrative self-efficacy detected here would be important.

These results should also be of interest to entrepreneurship training programmes targeted at people not yet involved in entrepreneurship, i.e. educational or vocational training programmes intervening earlier in the process than entrepreneurship support programmes

for nascent entrepreneurs. For such training programmes, the results presented here show that if they manage to raise the entrepreneurial intention levels of their participants, there is a chance of increasing actual later start-up rates. In addition, the findings indicate that this increase in entrepreneurial intention may be generated by using all three channels identified in the theory of planned behaviour: attitude, social norm and entrepreneurial self-efficacy. This also illustrates the importance for training programmes of assessing their impact as regards these elements and ensuring that they are not counter-productive.

From a more general standpoint, looking at the French context for entrepreneurship, it seems that the entrepreneurial perceptions that get reassessed upwards the most by a nascent venture experience are the ones concerning administrative self-efficacy. This is true regardless of the project's status. Though, as discussed in the limitations below, this may be due to the then prevalent context, this may also indicate the presence of a relatively vivid image of red-tape-burdened French entrepreneurship which then disappears when people enter the process. This administrative ESE was found to have a weak, but slightly positive, effect on start-up intention. Communicating on the elements composing this aspect of ESE (related to the planning of the project, administrative formalities and selecting a legal status) could therefore have a positive impact on entrepreneurial intention in the country.

7.2 Limitations of the study

Certain limitations which were present in this study are now discussed. First, contextual aspects may have influenced the results of the study. Specifically, the introduction of the "auto-entrepreneur" status in January 2009, i.e. just at the end of the first data collection could be seen as a certain "change of rules" for self-employment in France. In fact, regarding the one-year start-up rate reported in this study (close to 35%) one CCI counsellor indicated that she would have expected lower numbers (closer to 25%) if there

had not been this change in the national legislation. This study cannot tell whether the people who opted to register as auto-entrepreneurs would have found other ways to start their activity had this option not been offered to them (registered business, umbrella company or simply not declaring their work for example). Nor can it tell what this means for the future of these newcomers (in terms of survival and growth rates for example). In the same way that different factors influence the intention stage and then the transition into start-up stage, different factors may come into play when firm survival and growth are considered. Only a further longitudinal follow-up of the started activities could answer this question.

In addition, the first data collection was undertaken in the autumn of 2008 when the general French public started to become aware of the seriousness of the financial crisis which they previously felt did not concern them. The nascent entrepreneurs surveyed in this study found themselves setting up their projects at a time when credit rationing from the banks was severe, especially for projects such as theirs which suffered from the liability of newness. This probably influenced their answers and hence the results presented here. In particular, their answers concerning their perceived capability in obtaining financing for their projects (financing ESE) probably reflect the then prevalent economic environment.

Furthermore, the limited geographical location from which nascent entrepreneurs were surveyed (the French region of Brittany) may have had an influence on the results. For example, leaving the Parisian region aside as it is considered a special case in France, analysis of SINE 2002 data showed that Breton entrepreneurs tend to rely more on sole proprietorships that on incorporated companies, start with higher levels of initial financial capital and use more bank financing than entrepreneurs from other French regions (APCE, 2006). What is more, the partnership implemented for the data collection was with only one support network and within that network predominantly with one branch (293 of the

initial 506 questionnaires came from one branch). Ideally, other local networks would also have been included. On the other hand, this "exclusivity" enabled a level of cooperation that may not have been possible had more actors been involved. In addition, it would have been interesting to have a non-entrepreneurial control group involved in the study. This would for example have made it possible to investigate whether the general environment (such as changes in the French legal landscape or the then prevalent economic environment discussed in the preceding paragraph) also influenced perceptions about entrepreneurship of people not directly involved.

From a design standpoint, this study, like any longitudinal one, suffered from attrition between the first and the second survey. Several means were used to limit this sample reduction as much as possible (such as agreeing to call back people at 9PM or 10PM to collect their answers) but over 20% of the initial sample could not be reached one year later. In addition, missing data also turned out to be a more problematic issue than had been expected by the researcher. While ideally all the analyses would have been run on the exact same sample, this problem resulted in valid sample sizes differing between analyses.

What is more, the data collection method selected had implications especially for the first questionnaire design. Specifically, one demand of the CCI counsellors was that it would not take more than 10 to 15 minutes to fill out. As a result it was limited to four pages and some demographic, human and social capital information was collected directly from the CCI forms. This had an impact on the number of questions that could be asked. For example, it influenced the choice of a short attitude scale that did not make possible the analysis of the underlying beliefs driving the measured attitude.

The operationalisation of the human and social capital variables as well as that of employment status was limited to binary variables. More detailed categories might have provided more insight into their precise effect. For example, the educational level or work experience effects may exhibit more variety than suggested by the dichotomous measures

used here. In addition, as discussed in chapter four, some other variables which were included in the questionnaire suffered from a high non-response rate and may need to be rephrased or reconceptualised.

Finally, the analysis of the use of CCI support relied exclusively on the answers provided by the nascent entrepreneurs. It had originally been planned to triangulate their answers with those recorded by the CCIs themselves. However, the difficulty in obtaining this information within the time frame of the study did not permit this. Future studies should consider including such triangulation of data in order to increase their reliability.

Some of the limitations described above may be corrected in future research. In addition, the results trigger questions that also provide other interesting avenues of research. These are now discussed.

7.3 Suggestions for future research

One piece of "good news" provided by the results presented in this thesis is that they provide support for the existence of the link between start-up intention and actual start-up one year later. However, they do leave part of the transformation process unexplained and this could be explored in more detail. For example, entrepreneurial self-efficacy and the human and social capital variables included here provided little additional information in that regard. Using a finer level of operationalisation for them may yield new information. Furthermore, it is also possible that the relationships described here are not always as straightforward as they seem (Elfving et al., 2009; Krueger, 2009). Future research could therefore investigate other possible interactions and configurations in the model leading to start-up.

While progress has been made in entrepreneurship research in recent years it is apparent from this study that some scales can still be significantly improved. The detailed discussion in chapter four provided routes along which better operationalisation of entrepreneurial

self-efficacy scales could be developed for contexts such as the one studied here (mostly small scale, reproducing projects). For example, in measuring entrepreneurial self-efficacy for this study, the variable indicating if the nascent entrepreneur considered the action necessary was ignored. Incorporating it into future analyses may bring new insights or contribute to better scales designs. In addition, the attitude measure used here provides no information as regards the precise professional beliefs that influence its level. This could be investigated by future research. One challenge posed by the design of this questionnaire was the stricter time limit imposed on it than on those used in classroom settings. The operationalisation improvements should also strive for parsimony with the objective of being usable in professional settings.

In addition, this thesis has focussed on predictors at the level of the individual nascent entrepreneur. The only project-related variable included was the count of gestation behaviours undertaken by the nascent entrepreneur. Analysis combining both individual- and project-level variables could bring new findings. For example, adding variables such as the business sector of start-up, initial investment, source of financing or number of employees envisaged could bring a more complete picture of the determinants of start-up outcomes.

The results of this study highlight the importance of the project's advancement as measured by the count of gestation behaviours at the time of the first survey. This crude measure does not provide information about which behaviours, if any, contribute most to explaining the transformation. In addition, it does not analyse if the behaviours undertaken after the first session also influence the transformation of intention into start-up in any way. Discussion regarding these behaviours and possible temporal patterns associated with them is ongoing in the literature. Furthermore, gestation behaviours measured at T0 were shown to be linked to initial entrepreneurial self-efficacy and intention. They could be used in a more dynamic manner by looking at the impact of the behaviours undertaken between T0

and T1 on both project outcomes and changes in individual perceptions. Integrating these elements in an intentional framework could therefore provide interesting research opportunities.

Some aspects not included in this study may also bring new insights into the transformation process. For example, the cognitive style mentioned in the literature review has recently been shown to possibly influence some relationships between different entrepreneurial dimensions and intention (Barbosa et al., 2007; Kickul et al., 2009). It would be interesting to see if it also influences other parts of the model, especially the transition to actual start-up. Another question is whether cognitive style influences the use nascent entrepreneurs make of support or concerns the impact that the nascent venture experience has on the change in their perceptions towards entrepreneurship.

Finally, one important part left unexplored by this study is: what happens next? While the analysis provides information regarding the people who started, it cannot say whether these same elements will be the ones influencing subsequent survival and growth. Were the nascent entrepreneurs who started wise to do so? The results of this study indicate that individuals whose projects were started reassessed most of their entrepreneurial perceptions downwards after having started. Was this triggered by negative experiences suggesting forthcoming trouble for their activity or just a realignment of these perceptions to more realistic levels? What happened to the ones who said they were still working on their projects after one year? Only a continued longitudinal follow-up could inform these issues.

In summary, this thesis validates the appropriateness of the use of intention-based models in entrepreneurial contexts. In addition it illustrates the richness of the theoretical, methodological and practical contributions to knowledge that can be generated by using such models longitudinally. Furthermore, it shows the relevance of combining approaches selected from different streams of research present in the entrepreneurship field into a

common research project. Finally, this thesis has cast more light on the factors and processes involved in the nascent-entrepreneurship phase of new venture creation. It is hoped that this illustration of the opportunities offered by longitudinal intention-based research programmes will encourage other scholars to collaborate in developing similar projects on broader scales.

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